CAZON EAB -HZG



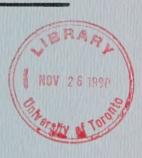


# ENVIRONMENTAL ASSESSMENT BOARD

VOLUME:

259

DATE: Tuesday, November 13, 1990



BEFORE:

A. KOVEN

Chairman

E. MARTEL

Member

FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810



(416) 482-3277

2300 Yonge St., Suite 709, Toronto, Canada M4P 1E4



EA-87-02

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental Assessment for Timber Management on Crown Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council (O.C. 2449/87) authorizing the Environmental Assessment Board to administer a funding program, in connection with the environmental assessment hearing with respect to the Timber Management Class Environmental Assessment, and to distribute funds to qualified participants.

Hearing held at the offices of the Ontario
Highway Transport Board, Britannica Building,
151 Bloor Street West, 10th Floor, Toronto,
Ontario, on Tuesday, November 13th, 1990,
commencing at 10:00 a.m.

VOLUME 259

#### BEFORE:

MRS. ANNE KOVEN
MR. ELIE MARTEL

Chairman Member

### APPEARANCES

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MR. D. COLBORNE MS. N. KLEER	)	GRAND COUNCIL TREATY #3
MR. C. REID MR. R. REILLY	)	ONTARIO METIS & ABORIGINAL ASSOCIATION
MR. P. SANFORD MS. L. NICHOLLS MR. D. WOOD	) )	KIMBERLY-CLARK OF CANADA LIMITED and SPRUCE FALLS POWER & PAPER COMPANY
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			FORESTERS ASSOCIATION
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MR.	H. GRAHAM		CANADIAN INSTITUTE OF
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MR.	G.J. KINLIN		DEPARTMENT OF JUSTICE
MR.	S.J. STEPINAC		MINISTRY OF NORTHERN
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Litt 9	I. ODORIAAI		WATCHDOG SOCIETY
			MITCHEOG BOCTETT

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APPEARANCES: (Cont'd)

MR. R.L. AXFORD CANADIAN ASSOCIATION OF

SINGLE INDUSTRY TOWNS

MR. M.O. EDWARDS FORT FRANCES CHAMBER OF

COMMERCE

MR. P.D. McCUTCHEON GEORGE NIXON

MR. C. BRUNETTA NORTHWESTERN ONTARIO

TOURISM ASSOCIATION



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1 --- Upon commencing at 10:10 a.m. 2 MADAM CHAIR: Good morning. Please be 3 seated. 4 Ms. Cronk? 5 MS. CRONK: Good morning, Madam Chair. Good morning, Mr. Martel. Good morning, Mr. Marek. 6 7 MS. CRONK: Madam Chair, you'll recall 8 that on Thursday last we provided a black book, a binder containing documents to which reference is 9 10 likely to be made during cross-examination. 11 There are some additional documents with 12 additional tabs to be inserted in the book, they have 13 been provided to my friends. I would like to provide 14 them to the Board now and, again, as we come to them, I'll deal with the issue of proving them for the 15 16 purposes of marking them as exhibits. 17 They are Tabs 16 through 31 and they follow, obviously, in order in the binder that the 18 19 Board has been provided. 20 MR. SHIBATANI: (handed) 21 MADAM CHAIR: Thank you. 22 MS. CRONK: You'll see that there's an 23 index at the front, Madam Chair, that's for the front 24 of the book. 25 Perhaps with Ms. Swenarchuk's permission

1	we can help Mr. Marek put his in the book too, it's
2	going to save us a little time.
3	MS. SWENARCHUK: Can you help Ms.
4	Swenarchuk too.
5	MS. CRONK: Sure.
6	GEORGE MAREK, Resumed
7	CONTINUED CROSS-EXAMINATION BY MS. CRONK:
8	Q. Mr. Marek, could I ask you first, if
9	you would please, to go to Tab 28 of the black binder
10	that's been provided to you. There is a map contained
11	at Tab 28 which has been extracted from the Forest
12	Resources Inventory, 1953, publication of the Ontario
13	Department of Lands & Forests. And for the record,
14	it's entitled: Report No. 5 of the Geraldton District.
15	Purely for clarification purposes, Mr.
16	Marek, looking at this map, can you confirm that the
17	area outlined in red and entitled Geraldton represents
18	the Geraldton District in the 1950s when you were
19	working with the Ontario Department of Lands & Forests?
20	A. Madam Chair, I wish I can oblige Ms.
21	Cronk there, but 1953 I was not working for the Lands &
22	Forests.
23	Q. No, I understand that, Mr. Marek.
24	You were, however, later in the 1950s, as I recall,
25	working for the Department and I would ask you simply

1 to look at the map and the area shown in red as being Geraldton and tell me if you can - if you can't, that's 2 3 fine - but if you can, whether that area reflects the 4 Geraldton District as it became known to you when you 5 worked with the Department in the late 1950s? 6 A. If I remember right, 1956 or '57 the 7 Lands & Forests reorganized and the district -- I start working in 1957, April the 1st, was completely 8 9 different. In other words, the district was enlarged, 10 the boundary was set on the west side of the Lake 11 Nipigon way up at the Hudson Bay lowlands. 12 So, you know, 1953, I cannot recall 13 Geraldton District, I was not working there, but I know when I started, 1957, the boundary was completely 14 15 different; in other words, it was enlarged, the 16 district was much larger. 17 Q. All right. Well, that is very 18 helpful, thank you. We will go to the later reports 19 That's fine, Mr. Marek. then. 20 Α. Okay. 21 0. Thank you. Mr. Marek, could I ask 22 you then to turn to the map on your left. You'll see 23 that a map has been put up on the easel.

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the Board can see that or not.

24

25

MS. CRONK: I don't know, Madam Chair, if

1	MADAM CHAIR: Yes, we can, Ms. Cronk.
2	MS. CRONK: Thank you.
3	Q. Mr. Marek, just looking at the area
4	outlined in blue, can you confirm that the area
5	outlined in blue on that map accurately reflects the
6	Lake Nipigon forest management agreement area.
7	A. Yeah, I think this is.
8	Q. Thank you very much.
9	MS. CRONK: Madam Chair, I am going to
10	ask Mr. Marek to assist us by identifying a number of
11	things on this map. Could it be marked as the next
12	exhibit, please.
13	MADAM CHAIR: Yes. That will be exhibit
14	1537.
15	MADAM CHAIR: Could you identify the map
16	again, please, Ms. Cronk?
17	MS. CRONK: Yes. Perhaps it could be
18	entitled Map of Lake Nipigon FMA area.
19	MADAM CHAIR: And the date?
20	MS. CRONK: I'll have to check the date
21	for you, Madam Chair. I'm not sure what the date is at
22	this moment, but I will do that at the break.
23	EXHIBIT NO. 1537: 1990 Map of Lake Nipigon forest
24	management agreement area.
25	MS. CRONK: Q. Mr. Marek, I am going to

give you a thick felt pen and I'm going to ask you, for the assistance of the Board and for the other counsel 2 3 for the purposes of our discussion, if you could identify a number of things on the map and just write 4 5 where they are on the map so that we have a visual 6 understanding of it as we come to discuss these things. 7 -Oh, lovely, thanks. Could you first --8 MS. CRONK: I'm informed, Madam Chair, that the map is current, that it's a 1990 map. 9 10 MADAM CHAIR: Right, thank you. And this 11 is this area the same area that we saw in Tab 3, 12 Exhibit 1536? 13 MS. CRONK: Mr. Marek has indicated that 14 the area outlined in blue is the Lake Nipigon forest 15 management agreement, so that would be the Domtar forest management agreement which is one of the units 16 17 shown at Tab 3. 18 MADAM CHAIR: All right, thank you. 19 MS. CRONK: Q. Mr. Marek, could you 20 first, if you would please, identify for the Board 21 where the Town of Beardmore is, we should start with 22 that. A. Town of Beardmore. Right here. 23 Q. All right. Could you just write that 24

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25

in for me, please.

1	A. Okay.
2	Q. And the Town of Red Rock is where?
3	A. Town of Red Rock is here. Well, it's
4	written there.
5	Q. Thank you. I recognize that it's
6	written, but it's so small that we can't see it from
7	where we are, Mr. Marek. And the Town of Nipigon,
8	where is it on Exhibit 1537?
9	A. It's all in blue, but it's over here
10	someplace. See, this has been coloured so it's hard
11	Q. Can you see it on the map?
12	A. Here.
13	Q. Right. Could you write it in for me,
14	please. Thank you.
15	Now, you've told the Board, Mr. Marek, in
16	the course of your evidence about the work that you did
17	in the Limestone Lake area and, in particular, about
18	your plantations established there.
19	Could you identify on Exhibit 1537,
20	please, where the Limestone Lake area is where you
21	conducted that work?
22	A. It's approximately like this.
23	Q. You are drawing
24	A. The boundary.
25	Q. A boundary on it?

1	A. Yeah.
2	Q. Could you write that in, please.
3	Just write Limestone Lake. And am I correct that that
4	is one of the areas that you spoke about in your
5	evidence?
6	A. Yeah. The other one is over here,
7	Tyrole Lake.
8	Q. And other one is what?
9	A. Tyrole Lake.
10	Q. Fine. Could you write that in,
11	please. Thank you.
12	A. This encompass large area over here
13	in this vicinity. Okay.
14	Q. You're writing Tyrole Lake?
15	A. Tyrole Lake, T-y-r-o-l-e.
16	Q. And is that the other area where you
17	established plantations about which you spoke to the
18	Board?
19	A. That's correct.
20	Q. All right. Now, in addition
21	A. There are others, there are other
22	areas which these are private, but they are not as
23	large, but you talk about here about 15,000 hectares
24	and here also around 12-, 14,000 hectares. So there
25	are other plantation which were established after I

Marek cr ex (Cronk)

1	arrived in the district, 1957.
2	Q. I understand. When you referred to
3	15,000 hectares you were referring to the Limestone
4	Lake area, and 14,000 hectares you were referring to
5	the
6	A. That is very approximate. In acres
7	actually this is around 35 27,000 acres, and this is
8	approximately 20,000 acres.
9	Q. All right. And just for the record,
10	so that 10 months from now when I come to read this,
11	Mr. Marek, I want to remember
12	A. When you come what?
13	Q. Just for the record, so that 10
14	months from now when I come to read this, so I remember
15	what the 'this' was, when you said 15,000 hectares you
16	were referring to the Limestone Lake area and 14,000
17	hectares was Tyrole Lake; is that correct?
18	A. Approximately.
19	Q. Thank you very much. Now, you have
20	also told the Board about the strip cutting project
21	that was undertaken under the auspices of the Black
22	Spruce Working Group and the various research studies
23	that emerged from that project.
24	A. Right.

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25

Q. Could you identify for the Board,

1 please, on Exhibit 1537, the approximate area where 2 those strip cutting studies were carried out? 3 A. Well, there were many of them and in 4 order to go through it accurately it would take me 5 about half an hour, Madam. I don't know whether you 6 like that or not. The fact was the major one were someplace over here, the other one was farther up. 7 8 See, there are no -- this is the whole 9 map, there are not even major roads here, but wherever, 10 they went through all these, some of them in the Cumber 11 Township, some of them -- the beginning was actually, 12 our first strip cutting was done here, on this side 13 someplace over here, that was way back 1959, 1960, then 14 we moved. 15 Q. Okay. Could I stop you there for a moment, Mr. Marek, so that we're clear, that we're 16 clear. As I understand it, there were strip cutting 17 18 trials which you introduced to the area and that were 19 conducted under your supervision in the 1960s; am I 20 right about that? 21 Α. That's correct. 22 All right. In addition to that, am I 23 also correct that starting in approximately 1973 and in the years following it, there were operational strip 24

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cutting studies carried out under the auspices of the

25

- Black Spruce Working Group?
- A. Yeah, they established three areas of
- 3 research which was then studied by CFS and report made
- 4 by several scientists. So I don't know what you want.
- 5 Do you want me to outline the area which were under
- 6 studies; in other words, three experimental areas, or
- 7 are you talking about total strip cutting which has
- 8 been done from here right throughout the...
- 9 Q. No, no. I understand the difficulty,
- Mr. Marek, and that's why I put my question the way I
- ll did. My question was: Could you identify, just
- 12 approximately I'm not asking you to take half an
- 13 hour just approximately the area where the strip
- 14 cutting studies conducted under the auspices of the
- 15 Black Spruce Working Group, the three areas you
- mentioned, were conducted?
- A. Okay.
- Q. Would you identify those, please.
- A. So one area was -- they were done
- 20 matter of three or four years, if I remember right, but
- 21 they were numbered 1, 2, 3 and 1 was around Peck Lake
- here, someplace here on Peck Lake, block 10, 11, 12 and
- then there was Bulge Lake was somewhere in here.
- Q. Sorry, we didn't hear the name of the
- lake. What was that, Mr. Marek?

1	A	Bulge Lake block, right here.
2	Q	Bulge Lake block. Is that the same
3	as Bogus Lake?	
4	A	Or Bogus, yeah. There is several
5	names here, seve	eral lakes there.
6	Q	Same area?
7	А	Yeah, that's the same area.
8	Q	And was Thimble Creek the other area?
9	A	Thimble was other area which was
10	further up here	
11	Q	Okay. Could you mark Thimble for me,
12	please.	
13	A	Someplace over here. Thimble
14	someplace here.	
15	Q	Thank you. And in combination then
16	were the Peck La	ke block, the Thimble Lake block
17	A	Thimble Creek.
18	Q	Thimble Creek block, I'm sorry, and
19	the Bogus Lake h	block the areas where the stirp cutting
20	studies conducte	ed by the CFS group were carried out?
21	A	Yeah.
22	Q	Thank you. Now, in addition to that,
23	dealing with the	strip cutting trials which were
24	conducted under	your supervision in the 1960s, where
25	were they physic	eally located in comparison to the other

- 1 ones that you've identified? 2 A. First of all, this one doesn't 3 surprise me, lots of it was done on the Auden area 4 which was way up north, so we haven't got a map for 5 that. 6 Q. Just dealing with the Lake Nipigon 7 FMA area, where were your strip cuttings? 8 Α. Just strictly --9 All right. Where were they? Q. 10 A. Well, there were several strip cuts 11 all over there. There were some in 1951 operation and 12 there were some in the 1956 operation and there were some in area close by Beardmore and some of them up 13 14 north. So there were probably two dozen or three dozen 15 of experimental area which strip cutting was done. 16 Q. You described at some length to the Board in your slide presentation some of the strip 17 18 cutting work that you had undertaken. Was there a main 19 area within the Lake Nipigon FMA where you did your 20 strip cutting work? 21 A. I want to be specific, Madam.
- A. I want to be specific, Madam. The

  slides I have been shown there was combination between

  Abitibi area and Domtar or the St. Lawrence area, and

  the '67 area which was pictured here in one -- two or

  three of the slides, was done someplace over here.

1	Q. I understand the difficulty. What I
2	am going to do, Mr. Marek, is show you two photographs
3	from your slides that we are particularly interested in
4	and ask you to locate where those were on the map,
5	please.
6	A. Okay.
7	Q. Mr. Marek, I am going to show you our
8	copy of the photographs made from your slides for slide
9	100 and slide 101 which show the strip cuts on the
10	ground that you spoke about to the Board.
11	A. Mm-hmm.
12	Q. And with reference to these two
13	photographs, could you identify them on the map for the
14	Board, please? (handed)
15	Showing you first slide 100 and 101.
16	A. Vincent block over here, right here.
17	Q. Is that slide 100?
18	A. Slide 100.
19	Q. Would you just write slide 100 on the
20	map for me?
21	A. Just a second. I have got to take a
. 22	good look at that number there. Is that slide 100?
23	Q. Excuse me. Is it 101 that you're
24	referring to?
25	A. Well, that's what you're pointing.

1	Q. So you said 100? I'm sorry, I was i
2	error. Is that Vincent Township?
3	A. Okay. I am going to put 101 here.
4	Q. Thank you. And looking next at slid
5	102, where are those strip cuts situated?
6	A. This is part of this is a part of
7	also 101, here, and this is area of the Abitibi strip
8	cutting.
9	Q. All right. Just dealing with 102 for
10	a moment then, could you write on the map where 102 is
11	located? Thank you very much.
12	Could you also indicate for the Board,
13	please, Mr. Marek, if you would on Exhibit 1537, the
14	big map, where the area of the Nipigon mud slide is
15	that occurred in April of this year.
16	Perhaps you could just write mud slide on
17	the appropriate area.
18	A. Madam Chair, can you read through
19	my
20	MADAM CHAIR: We are following you, Mr.
21	Marek. You made a mark on the south east shore of Lake
22	Nipigon for the mud slide.
23	THE WITNESS: So, no. It's between Lake
24	Helen and Lake Nipigon is area excuse me, here is
25	Lake Helen which is north of Town of Nipigon and river

1 goes from there through Lake Nipigon here. So it's one 2 half from the -- mile and half from Lake Helen 3 towards -- along the Nipigon River. 4 MS. CRONK: Q. Could you just point out 5 to the Board, please, where the Nipigon River is? 6 A. Well, that's all muddled up here. 7 Lake Helen is over here, so goes something like this. 8 Q. You are pointing to the left of where 9 you have written mud slide on the exhibit? 10 Α. Yeah. 11 0. Where is Nipigon Bay on the map? 12 Α. Nipigon Bay is way down, Lake 13 Superior. 14 0. And the Lake Nipigon River runs...? 15 Oh, it has nothing to do with Lake Α. Nipigon. 16 17 All right. Q. 18 A. Nipigon Bay is a part of Lake 19 Superior. 20 Q. All right. 21 There's the town here, so Nipigon Α. Bay, it's between the Domtar mill and the Cumber mill. 22 The Domtar mill and...? 23 0. The Domtar mill and Red Rock. 24 A. 25 0. Thank you. And the Nipigon River

1	then	
2	A. N	ipigon River is a river which is
3	connecting Lake Sup	erior with Lake Nipigon, and that
4	river goes first in	to Lake Helen, which is over here,
5	and then drains und	er the CN bridge into the Red Rock
6	Bay, I suppose. Ov	er here it's Lake Superior, here.
7	Q. T	hank you. That is helpful, Mr.
8	Marek. And then fi	nally, just with respect to this
9	map, could you use	the red felt pen I'm going to give
10	you and would you j	ust circle, please, the three block
11	areas where the CFS	, Domtar and MNR strip cutting
12	studies were conduc	ted?
13	A. V	incent here.
14	Q. S	orry, were the CFS studies in
15	Vincent Township?	
16	A. O	h, pardon me.
17	Q. A.	ll right. You told us it was
18	Thimble block?	
19	A. T	himble block, Vincent.
20	Q. TI	nimble block. Could you circle that
21	then, please?	
22	A. O	kay, Let's start with Bulge Lake.
23	Q. F	ine. Then you told us the Thimble
24	block was	
25	A. We	e start with this one here.

1	Q. Was the Peck Lake a block?
2	A. Peck Lake. That should be P not B.
3	Peck Lake.
4	Q. Then Bulge Lake and then the Thimble
5	block?
6	A. And then the Thimble block.
7	Q. Thank you very much. Thank you for
8	that, Mr. Marek.
9	A. Okay.
10	Q. Mr. Marek, could we turn then now
11	generally to the issue of tending, and certainly the
12	evidence that you've given to the Board on the issue of
13	tending, I want to make sure that I understand what
14	your evidence is and what your views are on this
15	subject.
16	As I understand it, based on your
17	evidence, you recognize that if our boreal forest is to
18	be maintained over time and renewed over time, tending
19	is mandatory in certain circumstances. Is that a
20	correct understanding of your evidence?
21	A. That is correct.
22	Q. I'm going to try to speak loudly, Mr.
23	Marek, because we have some acoustic competition here,
24	but if you can't hear me let me know.
25	A. Yes, I do hear you.

1	Q. And in your discussion with Mrs.
2	Koven, as I wrote it down on this issue, you said
3	sorry, you were asked by Madam Chair the following
4	question:
5	"I think you've said you'd prefer to
6	see a minimal use of chemical herbicides,
7	but in some situations you regard it as
8	necessary?"
9	That's the question that was put to you.
10	I was unclear, Mr. Marek, as to your answer. Is that
11	in fact your opinion as stated in that question?
12	A. Yes. I stated that in some area we
13	try to avoid or not to use the chemical for very
14	specific reason, and I think I elaborate on it what
15	these area could be; in area of multiple-purpose
16	forestry, in area where site condition and condition of
17	the growth perhaps not justify the areas chemical
18	sprayed. On the other hand, when you have an area
19	committed to timber production only; in other words,
20	area intensively managed for timber process, only of
21	timber, then of course you have to use all tools and,
22	in that case, I would, and I was using chemical spray.
23	Q. And in that case where lands are
24	designated for that purpose you would regard the use of
25	chemical herbicides as appropriate?

1	A. With the approval of timber
2	management plan and with the scope of the total timber
3	management planning and production and, of course,
4	subject to the public scrutiny, to approval of the
5	public, yes, there is the justification. But it's got
6	to be strictly written down in the timber management
7	plan as the priority No. 1, timber production. I hope
8	that this doesn't
9	Q. That's helpful.
10	A. Madam Chair
11	MADAM CHAIR: That's fine, Mr. Marek.
L2	MS. CRONK: Q. That's fine, thank you.
13	Would you agree with me, Mr. Marek, in that context
14	that it is important that foresters have available to
15	them some flexibility of decision-making when it comes
16	to tending and protection matters?
17	A. They have some flexibility in tending
18	application or prescriptions, that's what you are
.9	after, right?
20	Q. Yes.
21	A. The forester has a duty to prescribe
22	the best scientific, due to the scientific know-how and
23	his duty to conduct operation as a professional sees
24	fit; in other words, he will come and say this is
25	prescription according to the management plan and

- according to the management plan such and such

  prescription has been approved by the consensus, then

  he goes and implements this program. That is what I

  understood.
- Q. In fulfilling his professional

  obligations in that regard, would you agree with me

  that it-is important that foresters have, on each

  management unit, flexibility to reach the right tending

  and protection decision?
- A. Flexibility as proposed, just as proposed and prescribed in the timber management management plan, Madam.

- Q. Would you also agree with me that in order to fulfill those professional responsibilities that you've outlined, it's important that foresters on each management unit have available to them a broad range of cost effective management alternatives for tending and protection measures?
  - A. Alternatives as prescribed again and approved in the timber management plan. This is not one shot treatment, Madam, this is one decision which is made by one manager. This has to be approved in going through the process where the timber management plan specifies exactly the procedure, exactly the prescription understand the supervision of the public

1 in attendance. 2 Q. I understand. And in identifying the 3 options -- in identifying in a timber management plan 4 the options that are to be pursued, is it your view 5 that it is valuable for foresters to have available to 6 them on each management unit a broad range of cost 7 effective management alternatives for tending 8 protection? 9 That comes from the timber management 10 planning process. This is all considered, and if the 11 timber management plan says this is the option we have 12 and such and such will be selected due to the condition 13 of the stands, due to the scientific know-how, then of 14 course executes this prescription. 15 Q. And in doing that, he should have 16 available to him a range of alternatives that are cost 17 effective? 18 That's, I think, fairly accurate Α. 19 statement. 20 That's desirable? Q. 21 Α. Yes, desirable. These options are 22 there. They will be have to be chosen and implemented. 23 Q. Mr. Marek, you have indicated to the

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timber production is the identified objective where the

Board your view that there will be some areas where

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1	use of chemical herbicides will be necessary and
2	appropriate.
3	In those situations, Mr. Marek, in those
4	situations where it is necessary to use chemical
5	herbicides for tending, is it fair to say that when we
6	are talking about the boreal forest there will be
7	situations when it is only practical and efficient to
8	apply those chemicals aerially?
9	A. In a specific area, Madam, which
10	again is very accurately designated not only in the
11	plan, but also in the accurate prescription; in other
12	words, I'm not talking about prescription where you can
13	put anything you want, it's a prescription which is
14	specific, outlining the purpose, outlining the
15	prescription clear as possible, improve in timber
16	management plan. Yes, in this case, I agree.
17	Q. All right. Well, assuming that it is
18	clearly the area at issue is clearly identified in
19	the timber management plan
20	A. That's correct.
21	Qas clearly as possible, to use your
22	language, I am just focusing on the boreal boreal
23	forest at the moment, what I am saying to you is, given
24	the extent of the boreal forest there will be

situations when it is only practical and efficient to

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- administer chemical herbicides aerially?
- A. You know, this doesn't make it too
- 3 much sense to me as you put it before me. I like to
- 4 see a specific designated area, Madam, where timber
- 5 production will be the major objective, the maximum
- 6 timber production.
- When you talk about vast boreal forest
- 8 from here up to Hudson Bay, I have to be extremely
- 9 careful and say where, when, how and so on. So it's a
- very specific thing.
- 11 Q. Yes.
- A. If in future we are going to have
- plans, forest management plans which will be dealing
- with all aspects of forest management uses, Madam, it
- is very important to say and that's what I suppose
- 16 you tried to point here that certain areas will be
- 17 designated as maximizing timber production, immediately
- the prescription will be completely different as for
- 19 the area where, say, over here or over there, the
- 20 multi-purpose forestry will be goal of our enterprise,
- of our management and I think that is very important.
- 22 So far we don't have it, Madam.
- Q. Mr. Marek, my question is directed -
- and perhaps I put it awkwardly my question is
- 25 directed to the mode of application of chemical

1 herbicides and I am suggesting to you that in specific 2 areas in the boreal forest where it's identified in the 3 timber management plan that tending by chemical means is to take place, in those circumstances there will be 4 5 situations where it is only practical and efficient to 6 administer chemical herbicides by aerial application. 7 Do you agree? 8 A. In specific areas in future because 9 so far this is not, as you know, being done. Our 10 timber management plan right now that are approved would not qualify to that kind of treatment. 11 12 Madam Chair, I hope I expressed myself 13 very clearly on this. The present timber management 14 plans do not specify areas and do not go to the public where they say: Okay, here is an area of 20,000, 15 16 10,000 hectares which will be specifically assigned for 17 high timber values and the rest of it perhaps will not 18 be specified as high timber value, but will be treated 19 as a multi-purpose forest. 20 Here, I see the kind of nuances, if I can 21 say of perhaps a future kind of forestry. I see that will be much more specific, not only to your 22 23 prescriptions, but also identifying these areas where 24 this kind of forestry will be practiced. 25 Q. All right. Assuming for the moment,

1 Mr. Marek, that a specific area is clearly identified 2 for tending, I take it we are agreed that there will be 3 situations where aerial tending of chemicals is 4 appropriate? 5 Let's deal with that question. Do you 6 agree with that? 7 Α. I agree with that. 8 All right. That being the case, 9 would it be fair of me to conclude that you would not 10 as a forester support an outright prohibition on the 11 use of the aerial application of chemical herbicides? 12 Α. Will you come again, please? 13 Given what you have just said, given Q. 14 the opinion --15 That you have two areas, 16 multi-purpose forestry and --17 Q. No, sir, my question wasn't 18 distinguishing between those two. Let me try to put it 19 to you as clearly as I can. 20 What I am saying to you is, given the 21 opinions that you have expressed to the Board, is it fair for us to conclude that it is your opinion -- I'm 22 sorry, I'm putting it awkwardly. 23 24 Would it be fair to suggest that you would not support an outright prohibition on the use of 25

aerially applied chemical herbicides? It follows from 2 what you have said; doesn't it? 3 A. Aside from that I would not want... 4 Q. Mr. Marek, I will try and make it as 5 clearly as I can. This is perhaps my difficulty. 6 You have told the Board that there are 7 areas which will require chemical tending aerially 8 applied? 9 Α. There are special timber production 10 areas where tending has been, will be considered as the 11 silvicultural prescription, okay. 12 Q. Yes. Of those there will be some 13 where chemical tending will be required applied 14 aerially? You have told me that? 15 Α. That's right, in these specific 16 areas. 17 Q. Yes, I understand that. Now, I am 18 saying to you, it follows from that, does it not, you would not as a forester support an outright prohibition 19 20 on aerially applied chemical herbicides? 21 Madam, you contradict yourself. You 22 are talking about specific cases where I'm applying 23 certain prescriptions. Madam Chair --24 Q. Let me put it to you squarely, Mr.

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Marek.

_	A. Okay, put it squarely.
2	Q. Well, I'm sorry I've tried, but it's
3	Tuesday, maybe it will get better.
4	There has been the proposition made by
5	some interest groups before this Board that the aerial
6	application of herbicides in the future should be
7	discontinued.
8	A. Correct.
9	Q. I am asking you whether as a forester
10	you would support a ban on the aerial use of
11	herbicides, and I am suggesting to you that you cannot
L 2	conceivably support it given the opinions you have
13	expressed to the Board?
1.4	A. I already said on a certain areas if
L5	the area is designated as a timber production area,
1.6	maximizing the timber production.
17	Madam Chair, I said it twice, three times
18	that I could use chemicals and I will use it, but in
19	area which is not designated I would not use chemicals.
20	MR. MARTEL: That's the difference
21	between you are answering a question that's not
22	being asked, I think.
23	Ms. Cronk is talking about use of
24	chemicals if needed for timber management, for tending,
)5	but you are making it you are answering the question

that you are talking about if we in fact--1 2 THE WITNESS: Correct. 3 MR. MARTEL: --have two forests. 4 THE WITNESS: Exactly. One is timber 5 production and the other --6 MR. MARTEL: One is for timber production 7 only and the other--8 THE WITNESS: Multi-purpose. 9 MR. MARTEL: --multi-purpose. 10 THE WITNESS: Exactly. 11 MR. MARTEL: You are saying you would 12 only apply chemicals in the timber production forest. 13 THE WITNESS: Exactly. 14 MR. MARTEL: And the other areas that are 15 multiple use you would not use chemicals? 16 THE WITNESS: That's right. 17 MADAM CHAIR: We have your answer, Mr. 18 Marek, with respect to a ban on chemical herbicides, 19 and given all of the qualifications you would not 20 support a ban on chemical herbicides in specifically 21 designated timber areas? 22 THE WITNESS: That's right. I see it's very simple. I don't know what -- it has been 23 expressed by me several times during my presentation. 24 I said, I am for multi-purpose forestry in certain 25

areas. I definitely advocate timber production in 2 other areas. 3 If public feels that that is a forestry 4 they can practice or should be practiced by the 5 government on the Crown lands, then the maximum -- in 6 order to maximize the timber production -- let's be 7 clear, Madam, this is very special kind of forestry, 8 and when you mix these things together and say forestry 9 overall would you ban chemicals, I say, just a second, 10 I would like to know where, when and how and so on, and 11 that's exactly what I'm advocating here, Madam. 12 I think our approach to forestry is so 13 simplistic now that we are having problem to sell it to 14 the public. If we would have said right from the 15 beginning chemicals will be applied to certain areas under certain conditions, perhaps the public wouldn't 16 have so much difficulties with it, but we don't do 17 18 that. We say: Okay, here is an area of Domtar and 19 Domtar can use chemical rightly or wrong in place. 20 MS. CRONK: Q. Leaving side, Mr. 21 Marek -- and the clarification is helpful, I am grateful for the distinction that was made. 22 Mr. Marek, part of my questions were 23 focused on the issue of how to apply it. Assume that 24

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the area where it is going to be applied has been

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1 identified, assume that, all right, I am suggesting to 2 you when you come to think about applying chemical 3 herbicides from the ground or by the air, you would not 4 support, as a professional forester, a ban on 5 application by air with chemical herbicides? 6 It seems to me that's not a difficult 7 question. In those areas designated for tending prescriptions including chemicals, I am suggesting to 8 you - and I just ask you to tell me whether I am right 9 10 or wrong - you would not support a ban on the aerial application of herbicides in those areas? 11 12 In area of timber production, I 13 would. And I can turn it around, in cases like this, I would support chemical application. 14 15 Q. By which method? 16 Α. I suggest by using chemicals. 17 Q. Aerially? 18 I can use it from the ground, I can use it from the forest floor, I can use it specifically 19 on a certain area of the tree itself. I can use it in 20 21 many various ways. 22 What I would try to discourage, Madam, is - and I said it also in my statement - the blanket 23 24 spraying or the kind of overall spraying of total 25 countryside because I think that chemicals has the

- right place in forestry, in a specialized forestry for timber production.
- Q. I understand your evidence in that regard, Mr. Marek.

A. I would say that there are different ways and means to do it. You can do very broad area spraying using conventional clearcuts, you can do it applying to individual trees on the ground, you can apply it to groups of trees, you can apply it on the stumps of the trees. You can do it many, many ways which is throughout the world applied.

But, again, here is the nuances of proper forestry, that forester who is prescribing chemical spraying or chemical application to tending and so on got various choices where he says: Okay, here perhaps I should use it on a chemical — use chemical on a stump or use it for a group of the trees and perhaps say: Well, large area application doesn't make sense because the distribution of the competing vegetation is not such that area blanket spraying is justified.

Madam, I can just draw you a picture here in order to get --

Q. That's all right, Mr. Marek. Let me just see if I have got it at this point. Are you saying that all options should be open as to the

т.	appropriate method of apprication?
2	A. In certain areas of timber
3	production, in specific areas the foresters got this
4	is profession. He goes to the public in timber
5	management planning
6	Q. Are you saying, sir, that all options
7	should be open in those specially designated areas?
8	A. All options are open to the forester
9	if approved in proper timber management plan.
10	Q. Including aerial application of
11	herbicides where appropriate?
12	A. Again, in specific areas of timber
13	production which is agreed upon, signed and sealed in
14	the timber management plan.
15	Q. I understand. Mr. Marek, before you
16	left the employ of the Ministry of Natural Resources,
17	was glyphosate available for operational use in
18	forestry in Ontario?
19	A. Mm-hmm.
20	Q. Do you have any personal experience
21	with its use in operational circumstances?
22	A. I have not only used it, but I have
23	tested it and I have observed it for many years after
24	application and here comes the question we didn't agree
25	in my testimony as an expert. I am not an expert in

- 1 chemistry, but I'm expert in observing the results of 2 chemicals for many years and that deals with 3 silviculture, of course, and forestry in general. 4 I understand. 0. The Board has heard 5 evidence that glyphosate became authorized for use in 6 Ontario in 1984. 7 Α. Yes. 8 Q. You left the employ of the MNR in 9 1985? 10 Α. Yes. 11 Q. Did you in that year before your 12 departure use glyphosate in an operational context as 13 opposed to experimental trial? 14 A. Well, you want to see difference 15 between experimental application and of course --16 starting right from the beginning with brush kill, 17 which was 2,4,5 and later then to 4, this is chemical Tordon, Velpar, chemical as Roundup, Madam, I have I 18 19 think enough experience to see results of it. 20 Q. Sir, I am not challenging that. I put a very simple question to you. Did you in the year 21 22 prior to your departure from the Ministry of Natural Resources use glyphosate in an operational context as 23 opposed to experimental trials? 24
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A. I think we had in 1984, '85.

1	Q. In an operational context in 1984 or
2	'85, or do you remember? If you don't remember, just
3	tell me, sir.
4	A. Right now, '84, '85 I was involved in
5	chemical spraying, but I cannot not tell exactly where
6	it was because you are going to say, here and there, I
7	can't I cannot remember that.
8	Q. That's fine, thank you. You have,
9	however, used on a number of occasions 2,4-D over the
10	years in an operational contect; am I correct in that?
11	A. 2,4-D, Velpar, Tordon, right.
12	Q. You told the Board that with respect
13	to the plantations that you had established they were
14	doing well today; correct?
15	A. No, today they are not doing too
16	well.
17	Q. They are not doing too well?
18	A. No, they are not
19	Q. I misunderstood your evidence. With
20	respect to the Tyrole and the Limestone Lake areas on
21	the Lake Nipigon FMA were chemical applications of
22	herbicides part of the treatment authorized over the
23	years on those areas?
24	A. That's correct.
25	Q. Was that for tending purposes only or

1	did it include site preparation?
2	A. Strictly tending. I did not use
3	chemical for site preparation because I didn't deem it
4	necessary.
5	Q. With respect to the Limestone Lake
6	area plantations in particular, would it be fair to
7	conclude with respect to the Limestone Lake plantations
8	that the tending that was conducted on those
9	plantations did assist in their development?
10	A. Yes, it did for a moment, for certain
11 .	period of time it helped, but didn't the results
12	which I have followed didn't show me the kind of long
13	term. It was very short term things where after two,
14	three or four years we had to come back again and do
15	treatment to tend again in order to eliminate
16	competition of trembling aspen.
17	Q. Are your plantations free to grow in
18	the Limestone Lake area?
19	A. Of course everything is free to grow,
20	so is Limestone, I suppose.
21	Q. Are you saying then you were
22	unsatisfied with the tending efforts carried out on
23	those plantations, the Limestone Lake plantations?
24	A. I was. In some cases I was
25	satisfied. On the other hand, when I looked at these

1	results after four, five years I have noticed that I
2	have to come back again with the same treatment or
3	other treatment in order to keep it in the condition
4	Madam, there is a very important thing I think you
5	should mention here; that is, I was managing this area
6	of Limestone and north strictly for timber production;
7	in other words, production of primary species.
8	I was adamant to see pure black spruce,
9	white spruce of pure conifer species; in other words,
10	what lots of people now call monocultures.
11	Q. That is an important issue and I want
12	to make sure I understand it, Mr. Marek. Are you
13	saying that at Limestone Lake you were managing for
14	pure black spruce stands?
15	A. Pure black spruce and white spruce
16	stands.
17	Q. All right. It is in that context
18	that you were commenting on whether your tending
19	efforts satisfied you or not?
20	A. Partly, yes.
21	Q. All right. Was that also true at
22	Tyrole Lake, that you were managing for black spruce
23	stands?
24	A. Pure black spruce, jack pine and
25	white spruce stands.

1	Q. Would you agree with me, Mr. Marek,
2	that when that is the management objective; that is,
3	the achievement of a pure stand, a monoculture, as you
4	said, of whatever type
5	A. Nearly pure stands.
6	Qthat was the objective you had?
7	A. That was the objective.
8	Q. All right. And when managing on that
9	basis, the level of tending by whatever means that will
10	be required will be very high indeed?
11	A. Of course.
12	Q. All right. And is it in that context
13	that you indicate that you were not satisfied with your
14	tending efforts on Limestone Lake?
15	A. That's correct.
16	Q. And Tyrole Lake?
17	A. Correct.
18	Q. Thank you very much. Mr. Marek,
19	could I ask you to turn to Tab 4 of the black binder.
20	You told the Board in your evidence, Mr.
21	Marek, that with reference to your plantations on
22	Limestone Lake that you manually tended, as well as
23	chemically tended those plantation. Do you recall
24	that?
25	A. Yes, I do.

1	Q. All right. What appears at Tab 4,
2	Mr. Marek, is a summary of certain of the treatments
3	of the treatments conducted on certain of the blocks in
4	the Limestone Lake area.
5	I want you to understand how this was put
6	together. Where the complete SIS records were
7	available to us we did a summary of what the treatments
8	were for certain of the blocks in the Limestone Lake
9	area.
10	A. I'm aware of these records, Madam.
11	Q. Thank you very much. If we look then
12	just at the first page of Tab 4 dealing with what's
13	described as block 1 on the west and south of Limestone
14	Lake and the projects described, am I correct that in
15	the first column it indicates where the project was
16	carried out and the year in which it was carried out?
17	A. Mm-hmm.
18	Q. So, for example, when we look at 667,
19	that indicates on parcel six or area six in the year
20	1967, the treatment beside that indicated in the right
21	hand column was carried out; is that correct?
22 .	A. That's what I see.
23	Q. All right. Looking then just at this
24	block, block 1, am I correct that it reflects in terms
25	of tending and renewal treatments a large number of

manual tending and hand cleaning treatments, but in 2 addition a chemical release treatment for brush kill? 3 Α. Right. 4 All right. With respect to the 0. 5 chemical release, I am informed that that was conducted 6 by an aerial spray program. Can you confirm that for 7 me? 8 Are you talking about Tendor 69? Α. 9 I am. 0. Chemical brush kill, 2,4,5-T. 10 11 0. I am informed that was carried out by 12 an aerial spray program. Can you confirm that for me? 13 Yes, it was? 14 Yes, it was. A. Thank you. I take it, Mr. Marek, it 15 0. 16 would be fair to suggest that you recognize that in 17 certain situation the use of 2,4-D can be a valuable 18 tool for foresters? 19 In specific areas, yes. 20 And that it should be available for 0. use in forestry so long as it is appropriately applied? 21 22 Α. In specific areas, yes. 23 0. And looking at the treatments described on block 2 at Tab 4, the summary of 24 treatments there, once again, am I correct that they 25

reflect on the various parcels treated a large number 1 2 of hand cleaning and manual tending treatments, first 3 of all? 4 A. Again, I haven't got a specific map 5 in front of me, but in general terms I suppose the 6 summary here are probably correct. 7 Q. And do they reflect a large number of 8 hand cleaning and manual cleaning treatments? 9 That is correct. Α. 10 They also reflect, with respect to 11 the second page, dealing with block 2 on parcel 6, 12 chemical release and chemical cleaning treatments? 13 Yes, that's correct. 14 Q. All right. Again, with respect to 15 the parcels treated as summarized on page 2, they also reflect a very large number of hand cleaning and manual 16 17 tending treatments? 18 Α. That's correct. 19 You have urged the use of chemical 20 herbicides in the past on specific areas, Mr. Marek, including 2,4-D; am I right in that? 21 22 That's correct. May I qualify Α. 23 something for the benefit of the Board here. 24 I have mentioned during my slide presentation, I think, the importance of Town of 25

Nipigon and Red Rock in the vicinity of one of the
plantations, which is the Limestone. One of the
problems I had in many of these years where I was
trying to combat the vegetation or competition in my
very intensively managed plantation was exactly the
vicinity of the town which is using these areas for
recreational purposes.

The Limestone Lake area goes, as a matter of fact, right to the doorstep of the Town of Nipigon and on many occasions way back in 50's and 60's when I was planning the process of establishing these plantations, the problem was that when I approached the public or, as a matter of fact, public approached me was the case: Look, what are you going to do there in this Limestone area. Once you put access it becomes accessible, the public is utilizing the road for berry picking and mushroom picking and hunting and all of these recreational and non-recreational value; in other words, trapping is very — several Indian people trap from the Band, the Red Rock Band in Lake Helen there.

So I had that problem and I think this is important to realize that that area which I as a forester at that time designated for very intensive management of, say, spruces to supply Red Rock mill with fiber for next, 20, 30 years, which I have

examined was very kind of dubious, will they have the 1 timber, won't they have the timber and so on. 2 3 So anyway, when I have approached the 4 voice of public was something like this, and perhaps you will understand their concerns. They said: Look, 5 we do not wish to have our berry picking ground 6 7 destroyed by your chemicals, by your chemicals. 8 my chemicals as a forester. We don't want this, we are going hunting there every year, we don't want to see 9 10 our browse for moose being destroyed. 11 So it was a difficult task for me, 12 believe me or not, to negotiate some kind of compromise 13 where I said: Look, I am going to use it and any time 14 you feel it's going to -- you know, you are going to feel the interference of my practices as a forester to 15 intensively manage the area just come and let's discuss 16 it. That was, Madam, more than 20 years ago. 17 18 I just want to be clear on an aspect 19 of this that you are raising, Mr. Marek. 20 You have described to the Board what your objective was on these plantations at Limestone Lake 21 and the Tyrole Lake area and you have indicated that 22 you were attempting to achieve virtually a pure stand, 23

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a monoculture of black spruce and that that required

certain kinds of treatments?

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1	A. MM-NMM.
2	Q. Would it be fair to suggest that the
3	level and intensity of tending, all of these hand
4	cleaning and manual cleaning treatment we see on block
5	1 and 2 for Limestone, were made necessary as the
6	direct result of trying to create a pure stand?
7	A. Also, it was very much affected by
8	the public pressure which told me: Look, we want this
9	or we don't want that and so on. So it's a combination
10	of things. I had to negotiate very especially with
11	trappers, especially with hunters who say: I am going
12	to Limestone area up there for years and years, I
13	always get my moose and you are coming with your
14	chemicals.
15	So these kind of negotiations in these
16	days were very kind of simplistic one. You know, we
17	got together and were discussing it and eventually I
18	had some idea what to do or what not to do.
19	Q. You had the kind of one-on-one
20	dialogue that you think is desirable?
21	A. That's right. At that time I had to
22	do it because the people came. Nowadays, of course,
23	the procedures are completely different. We go to open
24	houses, we go to negotiations which are perhaps much
25	more widespread and the pressure of the other users are

- 1 much more intense than it was 25, 30 years ago.
- Q. All right. What I am suggesting to
- you is, and accepting what you have said about the
- 4 effort you made to accommodate those uses and to speak
- 5 to other users about what you were planning, that the
- 6 number of tending treatments reflected, just by way of
- 7 an illustration, on block 1 and block 2 of Limestone
- 8 Lake would not have been necessary but the desire and
- 9 the objective of creating a pure monoculture of black
- spruce standd; is that fair?
- Regardless of how they were done, that
- level would never have been necessary?
- A. Madam, I don't think that you are
- right on that issue. I had to go with manual tending
- treatment where I was trying to get chemical tending.
- 16 After I performed chemical tending there was such a
- pressure on me that next time I said: Well, we have to
- do it manually because these trappers and these hunters
- and the pressure groups, and some of them were in Red
- 20 Rock, some of them in Nipigon, some of them are from
- 21 Indian reserves told me: Look, we don't put up with
- your second or third chemical tending.
- Q. My question was, leaving aside the
- 24 method of tending, whether it was chemical or tending,
- we are talking about tending generally, I am suggesting

to you that had the objective not been to produce a black spruce, pure black spruce, to the extent humanly possible, monoculture plantations, that level of tending however achieved would not have been necessary; 5 is that not so? 6 Α. Ma'am, again we have to be more 7 specific about the history of these areas. 8 Q. I am talking about block 1 and 2 on 9 Limestone Lake. 10 It is not so simple to put forester 11 in a box and tell him it that so or isn't that so. This is also affected by the total area. 12 13 You see, the area has been not recently 14 clearcut or recent area of disturbance, has been 15 neglected, has been cut in 30's and then burned over 16 and eventually I said to myself: Due to the 17 productivity of these site, I will put monocultures in; 18 in other words, I will start very intensive forestry in order to find out what intensive forestry, No. 1, is 19 20 all about in spruces; No. 2, if tending supplies fiber 21 for Red Rock mill for next 40, 50 years. So that must be understood at the 22 23 beginning of the discussion, and once you have these kind of objectives then everything more or less falls 24 25 in.

1,	Q. Okay. Given that was the
2	objective I am not questioning the reason. Given
3	that that was the objective, Mr. Marek, what I am
4	suggesting to you is that what fell out of that was
5	this kind of intense tending regime however achieved?
6	A. Using chemicals and manual cleaning,
7	that's correct.
8	Q. Yes. Thank you. Now, you said
9	earlier you agreed with me that in the past you have
10	urged on specific sites in appropriate circumstances
11	the use of chemical herbicides including 2,4-D and you
12	told me that that was correct?
13	A. In specific sites in the context of
14	sizes, too, because you must understand that intensive
15	management to practice on few acres is probably not the
16	answer to our forestry. You have to have a larger area
17	of productive forest land where intensification will be
18	applied and, therefore, all means to the forest
19	management by tending.
20	Q. Am I correct in assuming, based on
21	the answers that you have given to the Board, that that
22	is not restricted to those areas where the management
23	objective is to create a virtually pure stand; in other
24	words, where the objective is not to create a pure
25	stand but perhaps a mixed wood stand, it may be

- 1 appropriate to tend using 2,4-D?
- A. Madam, this is completely different
- 3 situation, different condition and different objective.
- 4 When you talk about using herbicides in stands which
- 5 will be in mixed wood sense or conversion of mixed
- 6 wood, again you have to specify very clearly what the
- 7 conditions are, if that area is being contemplated in
- 8 the total as intensive management for timber only, if
- 9 there is a certain impact of other things.
- So you have an extremely complex
- ll decision-making process before and, again, that process
- and those regulations has to be in timber management
- plan in order to comply with this purpose, what purpose
- of your management is.
- Q. All right. I understand your view on
- the way this should be handled in timber management
- 17 plans, and please perhaps consider this situation. A
- 18 situation where an area is identified for timber
- 19 production but where it is not the management objective
- 20 to create a monoculture, rather it is the objective to
- 21 create a mixed wood stand having a predominance of one
- 22 type of species, the normal working group situation
- 23 where it not monoculture. Accept that as the
- 24 hypothetical situation.

1 Q. What I'm suggesting to you, Mr. 2 Marek, is quite simple, and I don't want any 3 misunderstanding between us on this issue. 4 A. It is not simple, Madam. 5 Q. From my point of view it is, the 6 concept is, and I would like your view on it. What I'm 7 saying to you is: Am I correct in concluding that it 8 is your view that the use of chemical herbicides, 9 including 2,4-D, can be appropriate in certain 10 situations even where the management objective on an 11 area designated for timber production is not to create 12 a monoculture or a pure stand. I would have thought 13 that was your view. Is that not your view? 14 A. My view is that this is -- you're basing your know-how and your statement on a present 15 16 condition, Madam, your statement to me, that under such condition where the manager decide on certain area to 17 18 eliminate the competition of poplar temporary; in other words,, retard or reduce the nature, then he is allowed 19 to use or will be allowed to use herbicides; is that 20 21 so? 22 Q. The hypothetical I've put to you was 23 not specific to whether the intention was to reduce or 24 not, what I said to you was: Leave aside the pure

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stand objective for a moment, you have told the Board

25

- about that, that is what you did and you had your
  reasons for doing it and it resulted in a certain kind
  of treatment regime.
- 4 A. Right.
- Q. Leave aside the situation where the

  objective is to create a pure stand monoculture, what

  I'm saying to you is, there are other kinds of

  situations where the objective is to create mixed wood

  stands having a predominance of one kind of species,

  for example black spruce.
- Is it not your view that in those kinds
  of situations where it has been determined that timber
  production is the objective, the use of chemical
  herbicides --
- 15 A. Madam --
- Q. Excuse me, let me just finish. The use of chemical herbicides may be appropriate in those situations as well; isn't that so?
- A. You talk about mixed wood stands,

  Madam. Now, let me tell you, and that is my message to

  you, that perpetuate, perpetuate a mixed wood stand can

  be done without chemicals. We have many management

  tools which we can put our forests back without great

  interference by cutting modification, by different

  prescription of silvicultural treatment, et cetera.

1	If you are telling me that through
2	chemicals we going to force nature to accept our
3	standards, Madam, I will tell you that that's pretty
4	futile thing because we are dealing with combination of
5	spruce and aspen and you mentioned to me mixed wood
6	stand, aspen proves it.
7	Madam, why should I convert something
8	into something when I can do it without chemicals, if
9	leave it, say, to cutting practices or certain
10	silviculture practices where I don't have to use
11	chemicals.
12	Q. Do you acknowledge, Mr. Marek, that
13	although in some situations the necessary tending can
14	be achieved without use of chemicals, there will be
15	situations where, in the non-pure stand situation, the
16	use of chemicals is appropriate?
17	A. Well, if you are going to use tbe
18	present practices, of course, I agree with you; if you
19	are going to use present practices and practices of the
20	past, we will have but I'm proposing to you is not
21	necessary, matter of fact, it's wrong in certain
22	instances. If we getting our fiber from intensive
23	managed area on one hand, why should we balance that
24	fiber coming from mixed wood stand.
25	You see, this is my problem with many

- 1 colleagues of mine, where we can argue for days what 2 our objectives are. If our goal, and that is where it 3 stems, if we are arguing here about goals, what is the 4 goal of our forest practices, to achieve some kind of sustainable balance, maintaining that sustainable 5 6 balance where, in a spruce working group or mixed wood 7 working group or hard... 8 Madam, that is something we have to 9 decide in future, because the pressure on us by the 10 public - I'm talking as a forester, as a manager - will 11 be that indeed we are interfering with certain natural 12 processes by cutting practices which are not justified, 13 so... 14 Sorry, Mr. Marek. Are you finished? 0. 15 So when you talk about mixed wood 16 working group, I personally feel that leave mixed wood 17 working group where it is and practice good forestry on 18 pure working groups like spruce with a good high 19 content spruce. So why should we then -- it doesn't 20 make sense to me. Q. All right. Mr. Marek, on stands in
- Q. All right. Mr. Marek, on stands in the black spruce working group, all right.
- A. That's right.
- Q. Where the objective is not to produce
  a pure black spruce stand, you will acknowledge that

one doesn't necessarily follow from the other? A. Well, this is -- I disagree again. 3 We have now -- Madam, we have a large area of 4 monocultures of black spruce working groups of Sb or 5 Sb/j which are producing primary species in such abundance that we obviously, if we renew them, if we 6 7 renew them the way they were, we haven't got a problem 8 to reach timber supply. We can -- any Sb type which 9 has, say, I am talking about density and stocking, which has seven or eight stocking to black spruce and 10 11 we going to renew it, Madam, Madam Chairman, why we are 12 looking someplace else to get it? 13 Q. All right. 14 A. We can get it from stands which we 15 have, if we do it properly. 16 Q. Mr. Marek, there are stands where the 17 objective was to create a pure stand of black spruce, examples are your Limestone Lake and Tyrole Lake 18 19 plantations; correct? 20 A. In area which is suitable for it, 21 Madam. 22 That's fine, sir, I didn't suggest Q. 23 otherwise. 24 Α. Okay. 25 Am I right about that, there are Q.

1	areas of that kind and those are examples?
2	A. Okay.
3	Q. Is it not also true that there are
4	areas of black spruce working group where the
5	management objective is not to create a pure
6	monoculture stand of black spruce; isn't that also
7	true?
8	A. If black spruce working group, Madam,
9	we should renew it to black spruce working group again.
10	Q. I understand, but that doesn't mean a
.1	pure black spruce stand; does it?
12	A. As close as possible, as much as
13	possible, so you have representation Sb 8, poplar 2,
L4	you have Sb/Pj 8 for spruce, 1 for jack pine and the
.5	rest of it. This is kind of things what I am talking
L6	about, Madam. We are converting this into not the same
17	working group after we disturb it in cutting.
18	Q. All right. Are you saying then that
19	where the objective is to return a stand to the working
20	group that was there before treatment
21	A. Before.
22	Qthat you're equating that to the
23	objective of achieving a pure stand?
24	A. That's right.
25	O. I see. And is it in those situations

elo	that you acknowledge that the use of chemical
2	herbicides, including 2,4-D, may be appropriate?
3	A. If you have a designated area as
4	timber production forest only, yes.
5	Q. I see. Is it not the case, Mr.
6	Marek, that you have advocated in the past the use of
7	chemicals, including 2,4-D, on areas where it was not
8	the objective to create a pure species stand?
9	A. No, my objective always been if I had
10	an area, Madam Chair
11	Q. Please take a moment and understand
12	the question, the proposition I have put to you. I
13	have said to you, sir, is it not the case that in the
14	past you have advocated the use of chemical herbicides,
15	including 2,4-D, in areas where it was not the
16	objective to create a poor species stand, a
17	monoculture; isn't that true?
18	A. Only in case where I have experiment
19	with again reaction of the system to my desire. In
20	other words, my prescription and that is very
21	important.
22	For instance, I have experimented quite
23	on a larger area with stand conversion, stand
24	conversion, where indeed your suggestion of mixed wood
25	tried to convert Sb or Pi or whatever, spruce working

- group, yes I did in many area.
- Q. And you are saying in experimental
- 3 areas only?
- 4 A. Yeah.
- Q. Could I ask you to go to Tab 5 of the
- 6 binder of documents that has been provided to you,
- 7 please.
- 8 A. Mm-hmm. That's the first one, Tab 5.
- 9 Q. At Tab 5.
- A. Yeah, okay.
- 11 Q. At Tab 5, Mr. Marek, is contained a
- letter purporting to be from you to the Canadian
- 13 Forestry Service, the Black Spruce Working Group in
- 14 Sault Ste. Marie dated July 19, 1985. Did you send
- this letter, sir?
- A. Oh yes, I did.
- MR. FREIDIN: What tab?
- MS. CRONK: Tab 5.
- MR. FREIDIN: Thank you.
- 20 MS. CRONK: Q. And am I correct that it
- 21 relates to your views and your observations made after
- 22 a tour of certain of Abitibi-Price Inc.'s limits in the
- 23 Clay Belt area conducted that year?
- A. Yeah, we have got to be very specific
- 25 there. Abitibi is mentioned only once on the page,

page - can't even read the page - on the third page: 1 2 "The same can be said about stock 3 planted by Abitibi-Price in the same 4 area." 5 You have got to be very careful in that 6 letter what and whom I am talking to. 7 Q. All right. Does this letter set out 8 your observations and your views based on a tour that you took of certain sites in the Clay Belt in that 9 10 year? 11 Α. That's right. 12 All right. And at page 5 -- sorry, at the top of page 5, Mr. Marek, of that letter could I 13 14 ask you to go that, please. 15 Yeah, if I can find the page number. Α. 16 It's in the top left-hand corner. Q. 17 Yeah. There but is no page --Α. 18 If you look at the bottom right-hand 19 corner where it says 6? 20 A. Oh, just a second. I have got 5 21 here. Okay. 22 Q. Now, Mr. Marek, as I understand it, 23 sites which you toured during that tour were not 24 restricted to sites where the management objective was the creation of pure stands, monocultures; am I right 25

1 in that, you toured a great -- a large number of sites? 2 That's not impression. We stop at Α. 3 many, many sites but let me point out, Madam, that I have in this case viewed more or less the efforts of 4 5 converting mixed woods into black spruce and black spruce "monocultures", and I also have seen some 6 7 natural conversion or planting in black spruce working 8 group and some of the seeding trials and so on, but 9 that went through the total spectrum of the area, not special Abitibi. 10 11 0. Yes. 12 Α. I can't recall. 13 Q. It went through the total spectrum of 14 the area and in a large number of sites; am I right? 15 Large number of sites. Α. 16 All right. And I would ask you to Q. look at the paragraph at top of page 5 which begins 17 18 with the words: 19 "I agree with the prescribed burning of large areas..." 20 21 Mm-hmm. A. About halfway down that paragraph you 22 0. are discussing the proliferation of aspen generation 23 and you say: 24 "The proliferation of aspen regeneration 25

1	will have to be coped with. The right
2	timing of tending interferenes by
3	chemicals will be of importance here.
4	Perhaps the right time is one of the
5	biggest challenges that has to be
6	met and monitored. It is here that I can
7	see that chemicals such as Roundup,
8	Valpar, et cetera could be most
9	effective."
10	Stopping there, Mr. Marek, are those your
11	words?
12	A. Yes, that's my words.
13	Q. All right. Does that letter
14	accurately reflect your view?
15	A. I think so.
16	Q. Mr. Marek, with respect generally to
17	the evidence that you've given on the need for research
18	and development and issues related to tending, you have
19	said to the Board, if I have understood your evidence
20	correctly, that the - let's talk about the Beardmore
21	Watchdog Society for a moment - that it has very
22	specific forest research priorities; is that correct,
23	the Society?
24	A. Have research.
25	Q. It regards certain areas as being

1	priority areas for forestry research.
2	A. I don't know
3	Q. All right. Let me help you, Mr.
4	Marek.
5	A. Clarify please.
6	Q. Could you go to the interrogatories
7	that have been filed at Tab 1 of the black book.
8	A. Which one is it.
9	Q. The Ministry of Natural Resources
10	interrogatories. Right, Tab 1 of the black binder, Mr.
11	Marek.
12	A. Oh yeah.
13	Q. The Ministry of Natural Resources
14	interrogatories, it's the second document to the end of
15	this tab stapled together.
16	A. The Forests No. 2.
17	MS. SWENARCHUK: On Beardmore No. 2?
18	MS. CRONK: Yes, on Beardmore, correct.
19	Q. There's a cover sheet saying MNR re:
20	Beardmore Watchdog. Do you have that?
21	A. MNR, that's right.
22	Q. Right. Could you look at
23	Interrogatory No. 10, please.
24	A. No. 10. Page 6, paragraph 3?
25	Q. Yes. Do you have that?

1 A. All right. 2 Q. Now, in that interrogatory you were 3 asked to set out on behalf of the Society what specific 4 priorities for forest research the Society proposes? 5 Α. Mm-hmm. 6 Q. And your answer is set out in 7 subparagraph (a). I take it this is your answer; am I 8 right? 9 Yeah. Α. 10 Q. And the items listed in sub (a) are 11 the priorities for research identified by the Society; 12 is that correct? 13 Α. What specific paragraph -- yeah, I 14 have it. 15 Q. And are the research priorities urged 16 by the Society? 17 Well, obviously, yes, yes. 18 Q. Would you also acknowledge, Mr. Marek, the need for additional research and development 19 concerning additional herbicides for appropriate use in 20 21 forestry? 22 Α. That's right. 23 Q. Yes. Would you also acknowledge the need for additional research and development concerning 24 appropriate insecticides to be used in appropriate 25

1	circumstances	in forestry?
2		A. Very much so.
3		Q. Including chemical insecticides?
4		A. That's correct.
5		Q. And are those matters which, in your
6	view, should	receive attention in the research
7	community in	forestry?
8		A. Yes.
9		Q. Now, you were asked by Ms. Swenarchuk
10	in the course	of your evidence to explain to the Board
11	your suggestion	on of the need for repeat chemical
12	treatments.	
13		You recall there was a discussion
14	regarding the	number of tending treatments required in
15	your own plant	tations but, in addition, in plantations
16	other than you	own. Do you remember that generally?
17		A. That's right, I remember.
18		Q. I know it's several days ago.
19	Specifically,	a question was put to you by Ms.
20	Swenarchuk on	this basis: You were asked to express
21	your opinion	regarding the number of tending treatments
22	required in p	lantations on your own. Do you recall
23	that?	
24		A. I don't recall it, but could be.
25	-	Q. Generally. All right. You

indicated, as I wrote down your answer, that in 1 situations of that kind you anticipated that repeat 2 3 tending treatments, and specifically repeat chemical 4 treatments, would be required. 5 Α. That's right. 6 Q. Is that your view? 7 Α. Yes. 8 Now, with respect to your own Q. plantations, Limestone Lake, we have looked at the 9 10 summary of block 1 and block 2. 11 Α. Yeah. 12 That's contained in Tab 4. You were 0. 13 practising, you told the Board, intensive management and you explained what that meant. You indicated as 14 15 well, as I understood your evidence, that the sites had 16 been recaptured by the species you were trying to 17 destroy. Did I get that correctly? 18 That's correct. 19 Q. Am I right then, Mr. Marek, that what 20 you were trying to do in tending on Limestone Lake was 21 to completely destroy any competing species to the 22 black spruce you were trying to reintroduce? 23 Α. That is correct. 24 Would you acknowledge, sir, that that Q. is not the normal objective of chemical or manual 25

Ţ	tending treatments; that is, the complete destruction
2	of competition?
3	A. What do you mean by normal, Madam?
4	Q. That is not the usual tending
5	objective of foresters when they carry out tending
6	treatments in the area of the undertaking?
7	A. Presently is, but I disagree with it.
8	Q. Is it your view then that tending of
9	any kind should only be undertaken when it is the
10	intention to completely eradicate or destroy the
11	competitor species?
12	A. That's correct.
13	Q. Do you acknowledge in any way the
14	desirability of achieving temporary suppression of
15	competition?
16	A. Scientifically and silviculturally
17	unsound, that is not sound forest management.
18	Q. Insofar as you are concerned?
19	A. That's correct.
20	Q. Do I take it then that if experts in
21	tending testified before the Board that it was
22	desirable on a silvicultural basis to achieve temporary
23	suppression of competition by the use of tending
24	measures, including chemicals, you would soundly
25	disagree with them?

observing the results of the so-called inhibition of tending vis-a-vis trembling aspen as a species, okay I realize that you can very welcome completely destr	oy,
orange to a vib cremoting aspen as a species, oray	oy,
4 I realize that you can very welcome completely destr	′,
for instance, herbacious species and species of many	S
6 but I do disagree vehemently in a multi-purpose	S
7 forestry you can consider these kind of treatments a	
8 sound silviculture treatment.	
9 In intensive forestry, yes, in area wh	ich
I have designated so, fine, but when it comes down t	0
nulti-purpose forest you cannot have your cake and e	at
12 it too, Madam.	
In other words, what I'm trying to tel	1
you is this: if you are going to have black spruce,	
you are going to have black spruce; if you are going	
have aspen, you are going to have aspen, but to mix	
them together, aspen is going to win and because you	
are talking about longer rotation, you are talking 8	
year rotation in black spruce, you are talking 60 year	
rotation in jack pine, you are going to have steady	

Q. Is it your view then, Mr. Marek, that what we should be doing in the boreal forest in those areas identified for timber production emphasis, if I

problem with trembling aspen as I have designated here

in the dynamics of boreal forest in my slides.

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1 can put it that way, that we should be managing for 2 pure spruce stands? 3 That is correct. 4 And that in doing that our tending 5 objective should be to completely eradicate any 6 competing species? 7 Α. That is correct. 8 Would you acknowledge that if that 0. 9 view is rejected by this Board, if this Board 10 determines at the end of the day that there is another 11 way to go about it -- sorry, let me rephrase it. 12 If that approach is rejected and it is 13 determined that it is appropriate to tend to 14 temporarily suppress competition, if the Board 15 determines that is appropriate, would you acknowledge 16 that in those situations the likelihood of needing 17 repeat chemical treatment is considerably less than 18 what you've suggested to the Board? 19 A. Now, come again on this one, madam. If would you repeat that, if... 20 21 Q. Yes. 22 If the Board... Α. If this Board accepts at the end of 23 Q. the day that it is a valid objective of tending to 24

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achieve temporary suppression of competition.

1 Α. I see. In other words, going to act 2 against my advice. 3 0. Exactly. 4 A. Very nicely. 5 If that were to occur, Mr. Marek, would you acknowledge that the likelihood of repeat 6 tending, repeat chemical tending treatments being 7 necessary is very much less than you suggested in those 8 9 circumstances? 10 A. If your objective is, Madam - and I 11 have to again interpret my own way - if we embark on 12 some kind of management where we going to protect our 13 crop trees in this association with chemical tending, 14 then I will propose to you that the recommendation of the Board will be against sound ecological forestry 15 16 practices. 17 Q. In your view, sir --18 In my view, of course, very much so 19 and my experience is showing very clearly that the 20 result will be no ending battle with our multi-users or 21 our multi-purpose forest, and from these two points 22 itself, silviculture, and of course the desire to have

inhibit some growth by chemicals, you are introducing

sound healthy forest will be always at stake. Madam,

you must look again. Once you cripple or once you

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- aspect we -- aspect into forestry which is very little known in the boreal forest itself.
- 3 Studying results from United States, New Zealand, Australia, all over the world, it seems to me 4 5 that chemical tending by temporary inhibiting specie is 6 unique in the boreal forest by the presence of aspen. 7 United States have some aspen and so have Alberta and 8 so have British Columbia, but in the boreal 9 compositions of our stand, aspen is very important, 10 very tolerant specie which rejuvenate itself so quickly 11 and so prolifically that any steps so far taken by us 12 to, you know, suppress it on certain desired time, like 13 we are going to suppress it for five years so jack pine 14 can come up and growing and stand will grow and then it's going to be resolved, it just does not work that 15
  - Q. Mr. Marek, I understand that you may not agree with the approach of trying to achieve temporary suppression, I understand that you have made that quite clear, but what I'm suggesting to you is, if that is the objective, do you acknowledge that repeat chemical treatments are less likely to be needed than if you are managing for pure plantations?

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way, Madam.

A. That's quite possible, that's quite possible. I do not deny that, because obviously

according to the site type, according to condition and all these complex inputs into the ecosystem as they 2 work, there is all kind of possibilities, but I still 3 think that we have very little experience really, 4 really, to say that that is a silviculture answer 5 6 strictly based on our experience. 7 Q. We are going to come back and look at the aspen issue that you've raised in that connection, 8 9 Mr. Marek. 10 Α. Good. 11 Q. But for the moment I have your 12 answer. Dealing with the treatments which you yourself 13 conducted on Limestone Lake on blocks 1 and 2, that is in Tab 4, dealing with block 1, am I right that only 14 15 one chemical release treatment was carried out? 16 A. That's correct. 17 There appears -- excuse me. Q. 18 Α. That could be, yes. 19 Q. But there appears to have been numerous repeated manual tending treatments carried 20 out. You have to answer for the reporter. 21 22 That's correct, that's correct. A. 23 Thank you. It does not appear to Q. 24 have been necessary that a repeat chemical treatment be 25 carried out?

1 A. Oh no, we have -- I cannot exercise 2 power of whoever put it, but we have several duplicate, 3 we have two series of spraying on top of the manual. 4 Q. I am just talking block 1, just block 5 1. 6 Well, what is block 1? Α. 7 Block 1, as reflected in the summary 8 of the treatments on that project, does not appear to 9 have received --10 Α. Madam, I have so many blocks in my 11 head the last 40 years. 12 Q. I'm sorry. I'm sorry, sir. Could I 13 ask you to go to Tab 4 please. Tab 4. MADAM CHAIR: Are you going to make this 14 15 an exhibit, Ms. Cronk? 16 MS. CRONK: Yes, I would like to make that the next exhibit. Thank you, Madam Chair. 17 MADAM CHAIR: That will be Exhibit 1538. 18 19 Could you describe it, please. MS. CRONK: This is a summary of 20 21 treatments on blocks 1 and 2 of Limestone Lake 22 plantation. 23 ---EXHIBIT NO. 1538: Summary of treatments on blocks 1 and 2 of Limestone Lake 24 plantation. MS. CRONK: Q. Do you have it, Mr. 25

1	Marek?
2	A. I have it, yeah.
3	Q. All I am saying to you, sir, is that
4	in respect of block 1 it does not appear to have been
5	necessary to repeat chemical treatment, although it was
6	necessary to repeat numerous times manual tending and
7	cleaning treatments?
8	A. You are trying to tell me that it was
9	not necessary.
10	Q. I'm just looking at the treatment and
11	asking. You didn't do it, I assume it wasn't necessary
12	if you didn't do it?
13	A. No, no, I couldn't do it.
14	Q. You did the hand treatment instead?
15	A. Madam, this plantation is now 60 per
16	cent poplar, 20 per cent of spruce and rest of it is
17	open up, if I remember right.
18	Q. Are you saying that in the years 1970
19	through 1989
20	A. I have wasted lots of money, that is
21	what I suggest, Madam.
22	Q. And are you suggesting you should
23	have used chemicals again?
24	A. No, no. I could have which that
25	would have probably apply chemical two or three times

1 and for my personal judgment I don't think would have helped, because I cannot from this block, for instance, 3 get poplar out of it, I can't. There is no way you can 4 do it, regardless what you do. 5 Q. And you elected to deal with the 6 problem to use repeat hand cleaning and manual tending 7 efforts? 8 You see the sequence there, Madam. Α. 9 All right. That is the case? Q. 10 Α. That plantation is probably worth 11 less right now because I have about 20,30, 40 per cent 12 stocking maximum black spruce. That was not my intent, I was trying to get hundred per cent. 13 14 Q. And if you look at block 2 at the 15 various projects carried out there, am I correct that 16 on Parcel 4 on the east and the west side of the road 17 there were no chemical release treatments carried out at all, that is the first page, they were all manual 18 treatments for tending? 19 That's correct. 20 Α. 21 0. And if we look to the next page on Parcels 6 and 3, chemical release or chemical cleaning 22 treatments were carried out, but only on Project 6 was 23 24 a repeat chemical treatment carried out?

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25

A. That's right. Chemical tending and

visiting these planting regularly I cannot exactly 2 pinpoint block 1 or 2 or 3, unless I have map in front 3 of me of the total management unit, but believe me or 4 not, after many instances we have sprayed twice and 5 tending manually one, two, three times, the results are 6 now that these plantation are in great danger to be 7 swalloed by poplar or trembling aspen. After 28 years poplar is now topping five, 10 feet in some cases. 8 9 Q. Looking at the work on block 6 -- I'm 10 sorry, block 2, Parcel 6 where the two chemical 11 treatments were carried out, they appear to have been 12 12 years apart? 13 A. Yeah. 14 Is that right? Q. 15 Α. Yeah. 16 Q. And in the intervening period you 17 carried out numerous tending and hand cleaning 18 treatments? 19 That's right.. And that plantation Α. 20 is still in big danger of being swalloed by poplar. 21 Q. Today? 22 Mm-hmm. Α. 23 Q. Can I ask you to go to page 39 of 24 your witness statement, Mr. Marek. Forests for 25 Tomorrow No. 3?

1		Α.	39?
2		Q.	Right. At the bottom of page 38
3	starting at se	ectio	on 6.2.1.
4		Α.	"After the softwoods are
5	harvested"		
6		Q.	The section tile is How Does Tree
7	Planting Fit 1	Into	the Conditioning of cut-overs. Do
8	you see that?		
9		A.	I got it.
10		Q.	Look at the second sentence, you are
11	describing the	e noi	thcentral region and the percentage
12	of annual cut-	-ove	rs in productive uplands on deeper
13	mineral soils	?	
14		A.	Mm-hmm.
15		Q.	You go on to say:
16		"Pri	ior to cutting, these sites are
17		usua	ally occupied by mixedwood stands."
18	You go on to d	desci	ribe the association of the various
19	species; corre	ect?	
20		A.	That's
21		Q.	At the bottom of page 38.
22		A.	Bottom of 38. "Balsam, white spruce,
23	black spruce,	jack	k pine"
24		Q.	Bottom of page 38, that's what you
25	have said?		

1	A. "After the softwoods are
2	harvested"
3	Q. You are describing the northcentral
4	region in part and the fact that sites prior to cutting
5	are occupied by mixed wood stands and you go on to
6	describe the species association; is that correct?
7	A. That's right.
8	Q. And then on the next page you begin a
9	discussion in part dealing with chemicals and you
10	suggest at the conclusion of the first paragraph on
11	page 39 that:
12	"Further repeated chemical tendings will
13	be required even beyond the age of 20
14	years after planting. It is and will
15	continue to be a vicious circle."
16	Do you see that?
17	A. Yeah.
18	Q. That statement was made with respect
19	reference to stands which you have described as mixed
20	wood stands
21	A. Conversion.
22	Qprior to harvesting?
23	A. That's correct. Conversion from
4	mixed woods into the spruce working group or
5	Q. You were asked a number of

1	interrogatories about this, Mr. Marek. Perhaps I can
2	approach it more quickly this way and we can come to
3	the interrogatories, if you wish.
4	Am I correct that your basis for making
5	the suggestion that you make about further repeat
6	chemicals tendings even beyond the age of 20 years
7 -	after planting is based on your observations that you
8	have made in the area of your own plantations and
9	elsewhere over the years?
10	A. That's my observations.
11	Q. Am I also correct that that
12	observation, as recorded on page 39, only applies when
13	the management objective is to create a pure species
14	stand, a monoculture of an identified species?
15	A. That is correct.
16	Q. And is it in this context that you
17	suggest that the plantations that you established at
18	Limestone Lake, for example, blocks 1 and 2, today hav
19	a severe poplar competition problem?
20	A. Correct.
21	Q. Am I also correct that the spurce on
22	those plantations is well beyond free to grow?
23	A. I think it's all declared free to
24	grow, I think. I didn't make that assessment. That's

outside my competence, but I think they are all "free

Ţ	to grow".
2	Q. Sorry, what's outside your
3	competence, sir, the assessment of whether they are
4	free to grow?
5	A. I didn't do the assessment free to
6	grow.
7	Q. I see. But in your judgment are they
8	not well beyond free to grow, the spruce on those
9	plantations?
10	A. I don't think so. There is a danger
11	of poplar there which, of course, come up periodically
12	and to declare free to grow after it's one metre high
13	and perhaps sprayed once or tended twice, I don't think
14	that makes it free to grow.
15	Q. So in your view they are not?
16	A. Well, there may be certain areas in
17	these plantation which are not in danger by poplar, but
18	majority is.
19	Q. Could I ask you to look again at page
20	38 and the sections we have just looked at. You begin
21	that discussion by reference to the Clay Belt. Do you
22	see that?
23	A. "Broadly speaking in the Clay Belt
24	approximately 20 per cent"
25	Yes, I have it here.

1	Q. Did you intend your statements with
2	respect to chemical tendings to apply to sites in the
3	Clay Belt?
4	A. Sites which are mixed wood stands,
5	yeah, poplar stands, associated with white spruce,
6	balsam and so on, that's right.
7	Q. Is it fair to suggest, Mr. Marek,
8	that your knowledge of the Clay Belt and sites in the
9	Clay Belt is very sporadic?
10	A. Let's quote Mr. Saltarelli back here
11	again, that letter to Abitibi.
12	Madam, I know something about aspen and I
13	know something about the competition in these mixed
14	wood stands and I'm not expert in Clay Belt, perhaps
15	I'm not even expert in the area around Beardmore.
16	After all, perhaps the evolution of
17	forestry knowledge is still fairly ahead of us and when
18	you can talk expertise this is my judgment, Madam.
19	I am basing this judgment on many, many observations,
20	coming back again, observe it again, coming back again,
21	observe it again. I think like to keep in that
22	perspective.
23	Q. I accept that it is your judgment,
24	Mr. Marek. My question to you was, is it fair to
25	suggest that your knowledge of sites in the Clay belt

1	is sporadic at best?
2	A. Here we go again. Expert of what?
3	Q. The question was not expert
4	A. Okay. The question is how many times
5	I have visited Clay Belt, Madam? Am I expert on
6	anything?
7	Q. Mr. Marek, could you turn to Tab 5 of
8	the binder, please, and your letter to the black spruce
9	working group and the Canadian Forestry Service.
10	MADAM CHAIR: Are we going to make this
11	an exhibit, Ms. Cronk?
12	MS. CRONK: Yes, Madam Chair. Could that
13	be marked as the next exhibit, please.
14	MADAM CHAIR: Exhibit, 1539.
15	THE WITNESS: What tab is that?
16	MS. CRONK: Tab 5, Mr. Marek.
17	MADAM CHAIR: Could you describe that,
18	Ms. Cronk, please.
19	MS. CRONK: Yes. It is a letter which
20	Mr. Marek has indicated he sent to the black spruce
21	working group, the Canadian Forestry Service, Sault
22	Ste. Marie, dated July 19th, 1989.
23	EXHIBIT NO. 1539: Letter sent by Mr. Marek to the
24	black spruce working group of the Canadian Forestry Service, Sault
25	Ste. Marie, dated July 19th, 1989.

1 2 MS. CRONK: Q. Mr. Marek, I would direct 3 your attention to the second paragraph of this letter 4 in which you indicate: 5 "The Clay Belt was and will remain for me 6 a new territory as my knowledge of the 7 conditions there is very sporadic." 8 Those are your words, Mr. Marek? 9 That's my words. A. 10 0. Were they true when you the wrote the 11 letter? 12 A. I stated it. 13 Were they true when you wrote it? Q. 14 A. What do you mean were they true? Do 15 you think I have pretend something? 16 No, sir. 0. 17 It is an argument here. Q. Are they true today? Do those 18 19 observations apply today? Do they apply today? 20 Α. Q. Is it as true today as it was then? 21 I think that the Clay Belt is a part 22 of the territory and I cannot visit every month or 23 every week as I do perhaps in area around Thunder Bay 24

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or around Beardmore, relatively speaking.

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Q. Could I ask you now to go to Tab 6,
        if you would, Mr. Marek.
 3
                       Α.
                          Right.
 4
                          At Tab 6 -- sorry, it is the next
 5
        tab, sir, in your book.
 6
                       Α.
                           Mm-hmm.
 7
                       Q.
                          At Tab 6.
 8
                           Oh, Tab 6.
                       Α.
 9
                      0.
                          Not page, I'm sorry. Tab 6.
10
                      A.
                          Yes.
11
                          At Tab 6 there are two letters.
                                                            The
12
        first is a letter which appears to have been from a Mr.
13
        Saltarelli of Abitibi-Price Inc. to Mr. Kayford,
14
        Regional Director of Canadian Forestry Service dated
        September 11, 1985. The second letter, part of the
15
        same tab, is a letter which appears to be a response
16
17
        from Mr. Kayford, the Regional Director of the Great
        Lakes Forest Research Centre to Mr. Saltarelli dated
18
19
        September 24th, 1985.
20
                      A. Correct. I am very glad it came up
21
        because I was not aware of that answer, you see. So
22
        now I know it.
23
                          That was my question.
24
                          Oh, great.
                      Α.
25
                          Had you, before I provided you with a
```

1 copy of these letters, seen a copy of it? 2 I am very thankful to you, Madam. Α. 3 Q. You are very welcome, Mr. Marek. Had 4 you, with respect to the question I am asking you, seen 5 a copy of these letters before I produced them to you? 6 Had you seen them before I gave them to you? 7 A. Not the answer, no. 8 The answer being Mr. Kayford's Q. letter? 9 I didn't see Mr. Saltarelli's letter 10 A. 11 either. 12 0. The answer in no? 13 No, I didn't. A. Q. All right, thank you. 14 MS. CRONK: Madam Chair, could I ask that 15 these letters be marked as the next exhibit subject to 16 17 further identification. 18 MADAM CHAIR: That will be Exhibit 1539. 19 MS. CRONK: 40, Madam Chair? MADAM CHAIR: 40. That is Exhibit 1540. 20 Could you describe them, Ms. Cronk? 21 MS. CRONK: Yes. The exhibit is two 22 letters. The first is a letter dated 23 September 11, 1985 from Mr. Saltarelli 24 to Mr. Kayford of the Canadian Forestry 25

1	Service. The second, also part of the
2	same exhibit, is a letter dated September
3	24, 1985 from Mr. Kayford to Mr.
4	Saltarelli in reply.
5	MADAM CHAIR: Thank you.
6	EXHIBIT NO. 1540: Letter dated September 11, 1985
7	from Mr. Saltarelli to Mr. Kayford of the Canadian Forestry
8	Service, and a letter dated September 24, 1985 from Mr.
9	Kayford to Mr. Saltarelli in reply.
10	THE WITNESS: Madam, you are going
11	through this or should I request or ask Madam Chair to
12	have my comments, please?
13	MS. CRONK: Q. I didn't intend to deal
14	with it, but you are welcome to do that, Mr. Marek.
15	A. Madam Chair, I would like to object
16	to certain things in this letter and that is that in
17	the page No. 2
18	Q. Which letter are you referring to,
19	Mr. Marek, the one to Mr. Kayford?
20	A. Yeah. May I quote the last
21	paragraph:
22	"In spite of Mr. Marek's outspoken views
23	on the forest industry, we believe that
24	his appraisal of our renewal program
25	would have been more accurate had a

1	company representative been present
2	during this visit."
3	Madam Chair, I object to this because I
4	understand it has been rescinded by Mr. Saltarelli and
5	that Mr. Saltarelli expresses the view that he was
6	invited but he couldn't attend these meetings for
7	various reasons.
8	Q. Let's stop there for a moment, Mr.
9	Marek. What is the basis of your information in that
10	regard because I must inform you that that is not my
11	information?
12	What's the basis of your information?
13	A. My information is based on a
14	discussion with a CFS official who was involved in my
15	invitation and he stated to me that indeed Mr.
16	Saltarelli later on said: Yes, I was aware but I
17	couldn't come.
18	Q. Are you talking about the tour that
19	took place in July of 1985?
20	A. That's right.
21	Q. And an individual at the Canadian
22	Forestry Service had suggested to you that Mr.
23	Saltarelli was available but couldn't attend?
24	A. That's right.
25	Q. Who is the individual at the Canadia

1	Forestry	Service?
2		

6

7

8

9

10

16

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19

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22

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24

25

A. I know very well that I feel quite

embarrassed about this situation, it's just not my

nature to quote the names or even put the names in the

hearings like this.

However, it seems to me, Madam, that if this is presented as evidence that true evidence should be spoken and true evidence should be presented to the Board, and if I have to I will name the CFS official who told me that.

Q. Mr. Marek, I am not sure much turns
on it. Let me just understand what you are saying.
With respect to the letter from Mr. Saltarelli to Mr.
Kayford, am I correct--

A. That's correct.

Q. --that Mr. Saltarelli is registering in writing certain complaints he had about not being informed of your visit and not being provided with a copy of your report, which is Exhibit 1538; is that correct?

A. Mr. Saltarelli was invited.

Q. Sorry, just deal with the contents of the letter for the moment. Am I right that what he is doing is registering some complaints about the fact that he hadn't been informed so sayeth the letter about

1 your visit and that he had not received a copy of your 2 report, which is Exhibit 1538? 3 That's what the letter says; is that 4 correct? 5 He didn't get my report? Α. 6 That's what the letter says, at the Q. 7 time. Mr. Marek, we are not understanding one another. 8 Just dealing with Mr. Saltarelli's letter --9 A. To Mr. Kayford. 10 Q. I regard this as serious, sir, and I 11 would ask you to look at this letter from Mr. 12 Saltarelli to Mr. Kayford. 13 Am I right that he is suggesting in it 14 some concerns about not having been informed of your visit to the area? 15 16 A. That's correct. 17 Not having participated in the visit? 0. 18 That's correct, because he was not Α. invited. 19 20 Q. That's what the letter says? That's what the letter says. 21 Α. 22 Q. All right. And Mr. Kayford writes back to him in reply and makes some comments about it? 23 A. That's right. 24 And you are now telling the Board it Q. 25

is your understanding from a person of the Canadian 2 Forestry Service that Mr. Saltarelli was invited but 3 was unable to attend? 4 That is correct. 5 Q. If Mr. Saltarelli were to say the 6 contrary, that he didn't know about it, that he was 7 upset about it and that's why he wrote the letter, 8 that's contrary to your understanding? 9 That's correct. Α. 10 Fine, thank you. Can we move on 11 then, Mr. Marek? 12 Α. I beg your pardon? 13 Q. Can we move on then? 14 A. I think I made my point, Madam Chair, because if Mr. Saltarelli was upset about my statement 15 16 he could have definitely defended itself and we could 17 have got together and discussed forestry in a civilized manner. I don't think this letter is civiled ... 18 19 And you say it isn't because it is 0. 20 contrary to your understanding of what occurred? 21 A. And also the accusation after all 22 they may have a different opinion about many things in 23 the forestry, but I think they should be discussed and not hidden behind the scenes. 24 25 See, I didn't get a copy of this.

should have come to because this is first time I hear 2 the conversation between Mr. Saltarelli and CFS and so 3 on. I was not aware it. I was aware there is some 4 misunderstanding that existed. 5 I was aware that Mr. Saltarelli didn't 6 like my thing which I did not think of because this 7 letter actually came from Thunder Bay. A colleague of mine asked: Can I read it. I said: Sure, you can 8 9 read it. We were discussing forestry matters in the 10 Clay Belt. I casually said -- as a matter of fact, he 11 asked me: Could I have it. I said: Sure you can have 12 it. Eventually I advance it to higher level and become affair which now is before the Board which is very, 13 14 very... 15 Q. Mr. Marek, did you personally provide 16 or cause to be provided a copy of your letter to the 17 Canadian Forestry Service to Abitibi Price Inc., your 18 letter date July 19, '85? Did you send them a copy of 19 this report? A. Yes, I give it to the colleague 20 21 forester from Abitibi, too. 22 Q. To whom did you give it to? A. Of course I cannot divulge because I 23 24 jeopardize his position.

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Q. I suggest to you, sir, that Mr.

- 1 Saltarelli, who was the responsible forester of the
- 2 unit at the time, was not provided with a copy of this
- 3 report and didn't learn of it until he learned of it
- 4 from sources other than yourself several months after
- 5 the visit?
- MS. CRONK: Excuse me, Ms. Cronk, where
- 7 does Mr. Saltarelli say that?
- 8 MS. CRONK: That is my information, Madam
- 9 Chair, which, if necessary, I am going to prove. It is
- a suggestion I am making to the witness.
- MADAM CHAIR: Mr. Saltarelli doesn't say
- that in this letter?
- MS. CRONK: In his letter to Mr. Kayford,
- he indicates that he only recently received a copy of
- the letter and that he had not been aware of the visit.
- 16 ---(fire alarm)
- MS. SWENARCHUK: Perhaps we can look at
- the dates of the letters.
- MS. CRONK: Perhaps we can rise at this
- 20 time and I will deal with this after.
- 21 MADAM CHAIR: Why don't we break for
- \_ 22 lunch. Thank you. And don't take the elevators.
  - 23 ---Luncheon recess taken at 12:00 p.m.
  - 24 ---On resuming at 1:35 p.m.
  - MADAM CHAIR: Please be seated.

1	MS. CRONK: Q. Mr. Marek, when the bells
2	rang we were looking at Exhibit 1540. Can I ask you to
3	go back to that, please. That's at Tab 6 of your book,
4	black book.
5	A. That's the Abitibi again?
6	Q. Yes, it is. Thank you. Could we
7	deal first with the letter from Mr. Saltarelli to Mr.
8	Kayford dated September 11, 1985 and I would direct
9	your attention to the last paragraph on page 1 which
10	read as follows:
11	"The Iroquois Falls Division has an open
12	door policy. We welcome anyone with a
13	serious interest in forest management to
14	come and see what we have accomplished
15	here. We have, as you know, several
16	cooperative arrangements on the go at any
17	given time, some of with the CFS. The
18	transfer of technology from research
19	agencies to forest managers requires
20	honest cooperation and communication.
21	We request, therefore, that we be
22	notified in future of any tours your
23	staff intend to undertake within our
24	timber limits."
25	Then back- to the first page again, Mr.

1	Marek, in the middle paragraph, the third sentence
2	reads:
3	"We are led to understand that Mr. Marek
4	and his CFS guide spent but a few hours
5	examining small areas of recently planted
6	upland sites. Since we signed our
7	- FMA five years back, we have established
8	115 square kilometres of plantation"
9	It goes on to indicate what Mr. Saltarelli's views of
10	those plantations are.
11	Those passages, would you agree, Mr.
12	Marek, suggest that the company was not informed in
1.3	advance of the visit and no company representative was
1.4	present? Isn't that what they suggest?
15	A. I don't think so. It doesn't suggest
16	at all.
L7	Q. You don't think so?
18	A. No. The fact which I stated to the
19	Madam, that they were aware of it. They may not have
20	been aware that I am coming personally, but they were
21	aware of the trip and visit.
22	There were very many other scientists
23	involved. There was afrom CFS, foresters and
24	scientists I knew fairly well. So I think it was kind
25	of go together and have a good chat about what we see

1	there and, unfortunately, it turned out to be very
2	animosity local issue. That's too bad. I'm very sorry
3	about this.
4	Q. Could I ask you to go to Mr.
5 `	Kayford's letter, the next letter, and I would direct
6	your attention this is the letter dated September
7	24, 1985. I would direct your attention to the second
8	paragraph which reads:
9	"Our normal practice is to inform the
10	agencies involved in advance when visits
.1	of significance are to be made by
12	GLFRC staff to forest sites under other
13	jurisdictions. The visit in question was
L4	most certainly in this category and the
15	staff involved simply neglected to follow
16	that procedure. I offer my apologies for
L7	this oversight."
L8	That suggests, does it not, Mr. Marek,
L9	that the CFS staff did not follow the procedure of
20	providing advanced notice of the visit to the company?
21	A. Au contraire, Madam. Au contraire.
22	Just the opposite happened. They waited for him
23	apparently and follow-up you have got correspondence
24	which testified to this, but apparently there is a
25	letter at CFS where Mr. Saltarelli more or less said:

Yes, we were aware of it but we couldn't come and 1 2 that's all I can say. That's the information I have. 3 So Mr. Kayford stated a policy rightly, but he didn't realise that the staff who was involved 4 in inviting me also invited the Abitibi representatives 5 in person, Mr. Saltarelli, and apparently he rescinded 6 later on the statement which I have -- I was speaking 7 8 frankly, I was planning to take my report as evidence, 9 too, but I was not aware of these communications. 10 Q. Just dealing with the contents of this letter from Mr. Kayford, do you agree with me that 11 12 the second paragraph does suggest that CFS staff did 13 not provide advanced notice of the trip? That's what 14 the paragraph says? 15 That could have been. Mr. Kayford 16 probably didn't know that. 17 Q. All right. And you have indicated 18 there is another --19 MADAM CHAIR: Ms. Cronk, what is the 20 point of this question? 21 MS. CRONK: The only relevance of the 22 questioning, Madam Chair, is that Mr. Marek I taught was suggesting to the Board that less than complete 23 factual information had been provided surrounding his 24 25 report.

1	1, as you recall, had no questions about
2	these two letters once I learned that he hadn't seen a
3	copy of them before I provided them to him. So the
4	purpose is only to clarify the record on that issue.
5	As far as I am concerned, nothing turns
6	on it except the suggestion made by Mr. Marek that less
7	than a fully complete and factual impression has been
8	left with the Board. I do not wish that suggestion to
9	go untested.
10	MADAM CHAIR: Do you think we have gone
11	far enough with this?
12	MS. CRONK: I do, Madam Chair.
13	My only final question on the matter was
14	that Mr. Marek has indicated that there is a further
15	letter with CFS of which he is aware which corroborates
16	Mr. Marek's understanding of the facts which I have
17	indicated is contrary to the information provided to
18	me, and I would ask Mr. Marek to undertake to produce
19	that letter to me.
20	MS. SWENARCHUK: Madam Chair, obviously
21	he may or may not be able to produce that letter. He
22	has been told that the letter exists. We can only
23	undertake to perhaps make an effort to produce it.
24	MS. CRONK: That's entirely satisfactory.
25	Thank you, Madam Chair.

1	MADAM CHAIR: Thank you.
2	MS. CRONK: Q. Mr. Marek, we were
3	discussing before this issue arose page 39 of your
4	witness statement. Could I ask you to go back to it,
5	please?
6	A. Page 39, yes, Ma'am.
7	MS. SWENARCHUK: With respect to that
8	undertaking then, Madam Chair, I assume it is of no
9	consequence to my friend whether this letter is
10	produced after Mr. Marek's testimony or is she
11	expecting it to be produced during his testimony.
12	MS. CRONK: Only if it can, Madam Chair.
13	I don't know how difficult this is going to be. I have
14	never heard of this letter before.
15	MS. SWENARCHUK: I expect that it will
16	probably be necessary for me to speak to Mr. Marek
17	about this if my friend has no objection.
18	MS. CRONK: That's fine.
19	Q. Mr. Marek, then with respect to page
20	39 of your witness statement, you will recall that we
21	were discussing the comments made at the top of page 39
22	with respect to chemical tending?
23	A. Right.
24	Q. And the context in which it had been
25	made. Am I correct that this discussion pertains to

1	what you described as productive uplands sites on
2	deeper mineral soils, and I am referring to the
3	beginning of the discussion at page 38 under Section
4	6.2.1?
5	A. Madam Chair, I think it is fairly
6	clear what my intent was.
7	Q. Are those the type of sites you were
8	discussing, the uplands fairly productive sites?
9	A. I'm discussing the site class "x" and
.0	site class 1, very productive and, by productivity I
.1	mean the productive capital of the site itself.
.2	This capital may not be in the humus
.3	layer, this capital is right in the mineral soil; in
. 4	other words, there is enough nutrients to provide
.5	maximum growth or maximize the growth of timber.
.6	And just for the benefit of the Board,
.7	may I quantify this kind of expectation I had and I
.8	still have to come degree. I have to correct it.
.9	Madam Chair, when I started this
20	intensive management, I was fully aware what it means.
21	Intensity means just get out of the site what's
22	possible for timber growth only, timber primary species
23	growth; something like has been done in Europe for
24	centuries, and that's where I have learned some of
) 5	these intracacies of it. The risks of it and so on.

1	But in this case of Limestone when we
2	were I have to repeat again these two area where
3	kind of prototype of things I thought for future, next
4	50, 60 years, and indeed I have assigned goals which
5	you didn't suggest I have to develop on this because
6	what I mean is intensive management.
7	Lots of people feel intensive management
8	is something you just get like this, intensified
9	management. That isn't the case. That's a very
10	thoughtful and very complex process to get involved in
11	intensive management. And here in the case of
12	Limestone I was expecting in 60 per cent 50 cords per
13	acre. That's right in my plan, which perhaps MNR
14	still will harvest someplace, and I said: I am here
15	going to have or like to have in very short period of
16	time maximum timber in order to produce it for Domtar.
17	I was sincere in it and I think that
18	should be bear in mind that perhaps I was naive because
19	I'm never going to get it, even if I'm here again
20	these plantations now, some of these are over 30 years,
21	but I don't think when I double it, say in 60 years, I
22	don't think I'm going to achieve what intend it to be.
23	So that's what I call intensive management.
24	Q. Thank you for that
25	MADAM CHAIR: Excuse me. Sorry, Ms.

1	cronk, for the interruption. On the list of treatments
2	that we saw in Exhibit 1538, is it your view now that
3	manual tending and cleaning was unsuccessful at the
4	Limestone
5	THE WITNESS: It was successful for very
6	a short period of time. In some cases, in some site
7	conditions it was done under certain time limits; for
8	instance, in summer during the hot August days when we
9	were tending, I have much better results. In other
10	words, I mentioned already in my presentation to you
.1	there are time periods where we can optimize this kind
12	of output out of these tendings; in other words,
1.3	strictly doing it through spraying or if you do it
14	certain way you get poorer results, if you do certain
15	times you get better results.
L6	This is what I always fight with. It's
L7	all experiment things what we do. We cannot really
18	document as yet the really analytical results of our
19	efforts, if it is by chemical or if it's by manual
20	tending.
21	MS. CRONK: Q. So that I am clear, Mr.
22	Marek, when you say that those treatments were
23	successful only for a short period of time, by
24	successful you mean successful in eradicating
25	completely the competition you were targetting; is that

1	correct?
2	A. That's right. In other words, we did
3	not successfully eradicate this competition.
4	Q. Were the treatments successful,
5	however, in temporarily suppressing the competition?
6	A. For two, three years, yes.
7	Q. Then coming back to the discussion on
8	pages 38 and 39, I think your answer was yes, but I'm
9	not sure. Is the discussion with respect to chemical
10	tending related there to productive upland sites on
11	deeper mineral soils?
12	A. Yes, in the context that you have
13	forest lands available for intensive area intensive
14	management of conifers, yes.
15	Q. So those are the types of sites you
16	were discussing then?
17	A. And similar ones.
18	Q. Yes.
19	A. You have got to be very, very site
20	specific. There is not just one answer because it's
21	deep site. You see, what bothers me in your tone as a
22	layman, as non-forester is that deep site doesn't
23	necessarily mean a good productive site. I have many
24	productive sites, "productive sites", which are not

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productive in the same...

1	Q. My only point as, your discussion
2	here was not concerned with the shallow, dry sites you
3	told the Board so much about?
4	A. No, definitely. They are excluded
5	completely. That's a different category.
6	Q. Thank you. Could you go to Tab 1,
7	please, the interrogatory responses and I will ask you
8	to look at, if you would, please, at MNR interrogatory
9	response No
10	A. Tab 1.
11	Q. 23?
12	A. Oh, pardon me.
13	MS. SWENARCHUK: Tab 1.
14	MS. CRONK: Q. You are looking for the
15	package, Mr. Marek, of MNR interrogatories. It is the
16	next one in sorry, third one in.
17	Could I ask you to go to question 23, if
18	you would, please.
19	A. Right. "In relation to the mixedwood
20	stands described on page 38, the
21	statement is made"
22	Q. Yes, that's right. You were asked,
23	Mr. Marek, to indicate with respect to the discussion
24	on pages 38 and 39 that I have drawn to your attention
25	to indicate what stand conditions and silvicultural

objectives for such plantations would necessitate any chemical tending after age 20 and repeated chemical 2 3 tending after age 20. 4 Sorry, Mr. Martel, that's MNR question 23 5 at Tab 1. In retrospect I should have separated these all out. It is the MNR bundle for Panel 3. It should 6 7 be the third one in, sir, the third bundle in. 8 A. I'm afraid I'm not the only one 9 having trouble with this matter. 10 Q. We all do. We all do, Mr. Marek. 11 Question 23, Mr. Marek, it was an interrogatory with respect to the discussion at page 38 and 39 regarding 12 13 the suggestion that repeat chemical tending would be required after age 20 with respect to the mixed wood 14 stands you were describing, and the suggestion that any 15 chemical tending, whatever, repeat or otherwise, would 16 17 be required after age 20. 18 Α. Right. 19 Q. You were asked what stands for which 20 silvicultural objectives would be required, and your 21 answer was: 22 "To achieve relatively pure coniferous 23 stands free of trembling aspen." 24 I take it from that answer, Mr. Marek, that the only situation in which you say such chemical 25

1 tending treatments would be required is where and if 2 it's intended to achieve a relatively pure coniferous 3 stand free of aspen? 4 A. Yes, that's right. 5 Q. All right. And then could I ask you just to leave that open and go to the statement of 6 evidence filed on behalf of the Beardmore-Lake Nipigon 7 8 Watchdog Society. 9 Α. Right. 10 0. Page 25. 11 A. Page 25, correct. 12 You will see Section C -- sorry? Q. 13 Α. I'm sorry, I have the FFT here. 14 Q. Right. It's the Beardmore statement? 15 Page 25? A. 16 Q. Page 25. 17 Okay, I got it. Α. 18 Q. You'll see the discussion under the 19 section entitled Use of Chemicals reads as follows at 20 the bottom of page 25: "A variety of chemicals have been used in 21 22 the Lake Nipigon area..." Do you have that, sir? 23 24 A. Yeah, I got it. 25 Q. "...for the purpose of tending young

1	coniferous stands since the early 1960s.
2	The successes and failures have not been
3	well documented. From observation
4	it could be said that repeated
5	applications of any chemical will be
6	necessary in order to achieve the goal of
7	unhindered satisfactory development
8	of a plantation and survival of primary
9	species."
10	A. Right.
11	Q. Now, Mr. Marek, are these comments
12	directed as well to those stands where it's the
13	objective of achieving a relatively pure coniferous
14	stand free of aspen?
15	A. That's the first component, that's
16	right.
17	Q. A relatively pure coniferous stand?
18	A. That's right.
19	Q. All right. And you were asked in
20	respect of that statement in the interrogatories on
21	what specific facts you relied in support of the
22	suggestion that repeated chemical treatments would be
23	necessary. And I would ask you to go to Tab 7 this
24	time of the binder, the black binder, Tab 7.
25	A. Mm-hmm, yeah.

1	MS. CRONK: And I would ask, Madam Chair,
2	that this be marked as the next exhibit. This is
3	Interrogatory No. 32 by the OFIA with respect to the
4	Beardmore Society witness statement.
5	MADAM CHAIR: This is Exhibit 1541.
6	EXHIBIT NO. 1541: OFIA Interrogatory Question No. 32 re: Beardmore-Lake Nipigon
7	Watchdog Society witness statement.
8	scacement.
9	MS. CRONK: Thank you.
.0	Q. You will see with respect to that
.1	statement at page 25, Mr. Marek, you were asked on
.2	which specific facts you relied in support of the
.3	suggestion, that's the question in subparagraph (c),
.4	you were asked as well to produce any and all
.5	documents, articles, information, analyses, et cetera,
.6	relied upon in support of the suggestion of repeat
.7	tending.
.8	The answer provided was that the
.9	suggestion was based on personal experience and
20	observation, personal monitoring of conditions of the
21	treated areas. I take it it's your observations and
2	your monitoring that's being referred to?
!3	A. It's not only that, it's observation
4	combined with observation of others, source and
25	experience of people who visit perhaps more frequently

such areas, which some of them are employed by MNR,

some of them are employed even by Industry, and we

share these kind of experience together, and I think

it's basically green thumb forestry.

- And it's most difficult, Madam Chair, to analytically document growth and performance of the ecosystem when you subject it to any tending treatment and perhaps there is farther research to be done in order to document better way, as I did perhaps in last 25 years.
  - Q. Apart from the evidence and the information that you've provided to the Board during the course of your evidence, do you rely on any written articles or publications of any kind that have not yet been produced in support of the suggestion that repeated chemical treatments post 20 years of age in a plantation are required to achieve desirable results?

A. Madam Chair, there are numerous publications depicting or describing succession, long-term, short-term from the United States. There are several very limited application made in Canada, there is very little publication and documentation pertaining the area in boreal forest; in other words, in Beardmore and area I am talking about here. And I am sorry to say that we are lacking really

- documentation, Madam, on some of these failures and successes here.
- When I look at it from the etiological

  point of view, monitoring periodically these, we call

  successes, I become very alarmed that indeed I am

  depending on my own observation and some of the

  measurements of height where I say it's showing -- that

  the purpose is not showing the results I wish to have.
- Q. And you are talking now about
  documentation pertaining to growth and yield?
- 11 A. Growth and yield.
- Q. All right.

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- 13 Not only -- Madam, we have to be very 14 careful. It's not only growth and yield. It's health 15 of the plantation, the nutrient documentation going 16 through the system, the root production itself, because 17 growth and yield not necessarily will give us some of 1.8 this information we want to have. So there is vast 19 scope of -- there are marvelous books written in the 20 United States in many areas of the world where they are documenting this for 20, 30 years, but I think we are 21 lacking this documentation here in boreal forest. 22
  - Q. Just dealing with the issue of tending, and specifically chemical tending, Mr. Marek, my question to you was: Are there any articles or

1	publications that you rely upon, that have not yet been
2	produced, in making the suggestion that repeated
3	chemical treatments 20 years after planting will be
4	required to achieve successful results?
5	A. In these specific cases I am dealing
6	strictly on my own observation, Madam.
7	Q. Thank you. Now, Mr. Marek, one of
8	the documents that you provided to the Board in the
9	source book for Forests for Tomorrow's Panel 3
10	statement of evidence was a 1983 report prepared by you
11	entitled: Evaluation of Three Silvicultural Treatments
12	in the Northcentral Region. You'll recall that you've
13	mentioned that during the course of your evidence.
14	MS. CRONK: Madam Chair and Mr. Martel,
15	I'm afraid I can't tell you where to find this exactly
16	in the source book. I know that's where it is, but
17	ours is organized in a little different fashion.
18	THE WITNESS: Do you have the source
19	book, Madam?
20	MADAM CHAIR: Yes, we do. Where is it,
21	Mr. Marek, source book 1?
22	MS. SWENARCHUK: It's 1515B.
23	THE WITNESS: Source book 2.
24	MS. SWENARCHUK: The articles again are
25	filed alphabetically, and this one filed under Mr.

1 Marek's name is about a quarter of the way into the 2 book. 3 MADAM CHAIR: That is Evaluation of Three 4 Silvicultural Treatments --5 THE WITNESS: Yes, that's correct. 6 MS. CRONK: Thank you. 7 Q. Could I ask you, Mr. Marek, if you 8 would please, to go to page 39 of that report. 9 A. That's correct, Tending Strategies. 10 Q. Yes. Now, you have been talking in 11 this section of this report about virgin mixed wood 12 cut-overs and young second growth cut-overs, and I 13 would refer you specifically to the section dealing 14 with tending strategies. First, this is your report: 15 am I right in that? 16 A. No, that's not my report because my 17 name -- it's Mr. Clemmer's report and I have it -- have 18 you got the forward there, have you got the 19 acknowledgement, oh yeah. 20 Q. I want to make sure you've got the 21 right document, Mr. Marek. I am asking you to look at 22 the report that you wrote. A. That's right, that's right. Okay. 23 24 Q. That's your report?

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That's right.

Α.

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1		Q. Thank you. On page 39
2		A. Yeah.
3		Qdealing with tending strategies you
4	indicate in t	ne first paragraph:
5		"Wherever softwoods were planted on
6		cut-over mixed wood sites the competition
7		of hardwoods and brush could have been
8		anticipated. In most instances tending
9		did not take place. In areas where
10		tending was done it had to be repeated."
11		A. Right.
12		Q. Now, stopping there for a moment.
13	You're talking	about cut-over mixed woods sites that
14	you inspected	throughout the northcentral region?
15		A. Second growth stands.
16		Q. Yes. And then in the concluding
17	paragraph you	indicate:
18		"In most cases where large areas of mixed
19		wood cut-overs were available for
20		treatment, only a certain portion was
21		actively treated. Such limited efforts
22		do not appear to make much sense
23		especially when the economy of scale
24		is so obvious. This would apply
25		primarily to herbicide spraying. To

_	spray rarge nomogeneous areas is cheaper
2	and more efficient; to spray intermittent
3	pockets is not well accepted by the
4	public; however, the public can more
5	readily understand the need for larger
6	specific areas where the success of
7	reforestation could be pointed out to
8	them and the benefits better documented."
9	Now, dealing with that, Mr. Marek, I take
10	it that that was your opinion at the time that you
11	wrote the report. Is it your opinion today?
12	A. It is. The way I have written up,
13	Madam, is full understanding of philosophy that we must
L <b>4</b>	concentrate on intensive managed area with true
15	intensity; in other words, one would say it's
16	intensively managed, it's got to be intensive. In
17	other words, allocation of areas to production of wood.
18	Now, that time when I was making the
L9	report I didn't see any such an attempt which
20	disappoint me because I thought everybody think like
21	George Marek, I'm sorry to say this, but the fact is
22	that I was expecting to find second Limestone
23	plantation or area of large size of monoculture
24	intended to produce wood, which I didn't found, and I
25	think that reason I didn't find it was simple.

1	There are two elements involved: No. 1,
2	perhaps the initial stocking of this crop was not
3	satisfactory; in other words, there was lots of
4	mortality, there was poor survival, there may have been
5	other circumstances; and, secondly, this area,
6	regardless how big or small they were, they were just
7	neglected, they were just bypassed and I suppose they
8	planted with trees and forgot about it, and I suppose
9	after 10, 15 years they come back to it and they say it
10	didn't just work the way it should be, simply you plant
11	trees and hope for the best. That was intention.
12	Q. All right, Mr. Marek. Just dealing
13	with the section that you have written here with
14	respect to tending strategies.
15	A. Right.
16	Q. I take it when you were referring to
17	the spraying of large homogeneous areas as being
18	cheaper and more efficient you were talking about
19	aerial spraying; is that correct?
20	A. Not necessarily. If the spray was
21	apropos under these conditions, fine; if it was not
22	apropos and there was some other means to do it,
23	tending in general; in other words, protecting the crop
24	which we have established or tried to establish.
25	And again I have to go back to the idea

- 1 of cropping in an area of, you know, as I said before, 2 in area where it's going to be decided for timber 3 production. 4 Q. All right. Mr. Marek, with respect, 5 looking at the portion that you have written here, weren't you specifically talking about spraying, not 6 7 other tending methods. You were specifically talking about the spraying of large homogeneous areas; weren't 9 you? That's what the words say. My question to you 10 is, with respect --11 A. It would apply primarily to herbicide 12 spray, yeah. 13 Q. And I'm suggesting that when you were 14 talking about spraying --15 A. Yeah. 16 Just when you were talking about 17 spraying, you were talking about aerial spraying? 18 A. I was talking in this case probably 19 about the aerial spraying, yeah. 20 Q. All right. And with respect to the 21 concept that is set out on this page, am I right that 22 your view of the type of areas that can be designated for intensive timber production that you have described 23
  - A. Oh, it's got to be otherwise this is

can be quite large homogeneous areas?

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- no point to have intensive management done on one or two acres of land, Maam.
- Q. And what you're suggesting here in
  this report to the Ministry is that in such areas, in
  areas of that kind, that large aerial spraying is
  cheaper and more efficient and can be explained to the
  public based on silvicultural reasons; is that correct?
- A. That is correct.
- 9 Q. All right.

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- 10 Again, Madam, may I interject here by 11 stating that the specific spraying or the tools of spraying can be walker on area that needs it or can be 12 13 large in area that is larger, so it's -- if I recall right, I have found many areas which perhaps there is a 14 15 large block which requires spraying here, requires 16 spraying over there, requires tending, tending over 17 there.
  - Well, by spraying over the area it's not my intent to say it's going to be all blanket spray, these areas can be taken care of by individual, say, patch of spraying and individual even tree spraying for that matter.
- Q. When you refer to mixed woods in the context of what you were talking about here, what kind of site were you talking about?

1	A. Well, in this case I was talking
2	are well, first of all, let me point out, Madam
3	Chair, that in those days, in 50s, 60s, 70s when
4	planting was done, the forester usually weren't
5	considering the better sites. That, however, does not
6	mean they really producing best site they had due to
7	the problem of logging, the residue, the competition
8	and so on. You have many productive forest land which
9	are left for second cutting, like, for hardwood
10	utilization and so on.
11	So in these days the forester had a very
12	difficult time to operate any kind of large area
13	because it was so badly broken up by virtue of not only
14	terrain conditions but slash conditions and utilization
15	and so on.
16	Q. Mr. Marek, just in your own report.
17	A. Yeah.
18	Q. Just in your own report, what were
19	you referring to as mixed wood sites, what type of
20	sites?
21	A. All kinds of sites mixed wood
22	association; in other words, there were hardwoods,
23	there were softwoods, not necessarily good or very
24	productive sites.
25	Q. Mr. Marek, are you familiar with the

- evidence given by Dr. Maxwell McCormack before this
- 2 Board?
- 3 A. The American, yeah, yeah.
- Q. Professor McCormack testified that in comparing tending treatments many more manual tending treatments are required than chemical treatments to
- 7 achieve the same objective?
- 8 A. Yes.
- 9 Q. Would you agree with that?
- 10 A. Yes, in most. Instances in some
  11 instances I have result which are showing just the
- 12 opposite. In some of the summer -- late summer tending
- I have practically eliminated, eliminated hardwood,
- 14 especially poplar competition. Now, I cannot explain
- you why, maybe it's the time of the moisture system,
- it's the time -- has to do with the time itself,
- temperature, and impact on the forest floor and that
- way impacting, of course, the suckering and
- reproduction of the trees.
- But I have instances, several instances
- in these areas, experiments here and here, where manual
- tending was extremely successful. We didn't have to
- come back at all, matter of fact I have shown some of
- the scientists these areas a few weeks age and we were
- looking at it and we are puzzled, we don't know why.

- So that's one of the problem we are having, that we don't know why.

  Q. Would you agree with Professor
  - McCormack that in most instances, when you compare the both types of treatments, manual tending requires more treatments than chemical?
- Q. Oh, I would agree with that.

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- Q. Would you also acknowledge that with
  manual tending that repeat treatments are usually a
  certainty while with chemical treatments they are only
  a possibility?
- A. Certainty, possibility, hmm.
- Q. I'm comparing the two, that with
  manual tending treatments, this is according to
  Professor McCormack, repeat treatments are a virtual
  certainty; whereas with chemical treatments, repeat
  treatments are a possibility. Would you agree with
  that?
  - A. Professor McCormack, you see, I read his book, matter of fact he gave lecture several years back and it seems to me that again, he's not "expert" in the boreal forest up here.
- While he works some of these things in

  Minnesota, Illinois and so on, it seems to me that our

  condition, the environment and the condition we have

1 here, perhaps are not identical what he has 2 experimented with and teaching, matter of fact, the 3 lectures. 4 Q. Be that as it may, Mr. Marek, my 5 question to you was: Would you agree that generally speaking manual tending treatments -- repeat manual 6 7 tending treatments are virtually a certainty with 8 manual tending; whereas repeat treatments with 9 chemicals are a possibility. Do you agree or disagree 10 with that? Do you agree with that? 11 A. I think in general terms, yes, you 12 are right. 13 Q. That's fine, thank you. Now, you 14 have also been very critical, as I read your statement, 15 Mr. Marek - and please correct me if I am wrong - in 16 your witness statement for Forests for Tomorrow you 17 have been very critical of the practice of using herbicides on rights-of-way and public roads. Could I 18 19 ask you to go to page 64, please. 20 That is FFT? Α. 21 Q. Yes. 22 64. 23 Q. Forests for Tomorrow witness 24 statement page 64.

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A. Yes, I have...

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1	Q. I direct your attention, Mr. Marek,
2	to the last paragraph on page 64 which begins with the
3	following sentence:
4	"The spraying of public roads and
5	rights-of-way is unacceptable."
6	Do you see that?
7	A. Yes.
8	Q. And you go on to discuss it. Would
9	you acknowledge, Mr. Marek, that in northern Ontario
10	the spraying of public roads and rights-of-way is very
11	often done both by the Ministry of Natural Resources
12	and Ontario Hydro?
13	A. Hydro is out, don't spray my more.
14	Q. They used to in the past?
15	A. They used to in the past, but they
16	cut it off. Very simply, they cut it off.
17	Q. And would you acknowledge as well
18	that that type of spraying on rights-of-way and public
19	roads was often done for safety reasons and to protect
20	the structure of the roads?
21	A. Oh gosh, there are other ways to do
22	it, Madam.
23	Q. Sir, that wasn't my question, I'm
24	sorry.
25	A. Yeah, but

1	Q. I'm sorry, I welcome your comments,
2	if you could respond to the question as well it would
3	be helpful. My question to you was this: Would you
4	acknowledge that spraying of that kind on public roads
5	and rights-of-way was usually done for safety reasons
6	and to protect the structure of the road?
7	A. In the minds of these people who
8	prescribe it, that was the cause.
9	Q. All right. And spraying of that kind
10	was intended and is intended; is it not, to prevent the
11	breakdown of roadway shoulders and road surfaces due to
12	brush encroachment. That's one of the objectives of
13	spraying public road ways; isn't it?
14	A. Yeah, to have a wider vision; in
15	other words, more yes, that's probably the reason,
16	yeah.
17	Q. It provides means really, I suggest,
18	of ensuring a safe functional road system; isn't that
19	so?
20	A. I think that is a good reason.
21	Q. I would also ask you to look at page
22	65 of your witness statement. The first full
23	paragraph, same witness statement, you've said, the
24	first sentence:
25	"In some cases the use of manual tonding

1	to release patches here and there would
2	be cheaper and more effective than the
3	aerial application of chemicals."
4	Do you see that?
5	A. That's correct, yeah.
6	Q. All right. Now, just dealing with
7	that suggestion; that is, that the use of manual
8	tending treatments is cheaper than the use of
9	chemicals, would you agree with me that that depends
10	entirely on the extent of the area requiring treatment?
.1	A. Extent, the whole aspect of the
.2	species and patches, you know, in other words, what I'r
.3	saying that in some cases the consideration got to be
. 4	given if the area is too small and doesn't justify
.5	large spraying.
. 6	Q. And if the area is too large, it
.7	doesn't justify tending; is that also true?
.8	A. If that area was Yeah, it's got
.9	to be specifically aimed to the target of the area; in
20	other words, here's a large area which is considered
21	for spraying, it should be looked upon the necessity of
22	better implementation by concentrating on patches
23	rather than the total area.
24	In other words, I do not like to see the
25	spraying done in the manner that you spray area

1	regardless of actual distribution of the competition.
2	Q. Right.
3	A. Do I express it clearly?
4	MR. MARTEL: I think you're saying it
5	should be site-specific.
6	THE WITNESS: Not only site-specific but
7	also species specific where they occur, okay.
8	MS. CRONK: Q. And just dealing with the
9	economics of it, Mr. Marek, which is the point being
10	addressed on page 65.
11	A. Right.
12	Q. You weren't suggesting, I take it,
13	that large areas can be treated manually for tending
14	more economically than they can by spraying?
15	A. Madam, I don't suggest it, however,
16	under certain condition let me point one very
17	important thing which is happening in northern Ontario.
18	Q. Sorry, sir. Could I just make sure I
19	understand the answer to the question, first.
20	A. The answer is that choice between
21	aerial spraying or herbicide spraying and physical
22	tending by people. My point is there, Madam Chair, we
23	have hundreds of Indian people up north doing
24	practically nothing.
25	When I arrived up north, arrived up north

I tied up these people to tree planting and 2 silviculutre work as tending. I have used these people 3 for many years successfully. 4 It would have been much easier for me to 5 spray it chemically, but I was using these people in order to get them off the welfare, keep them busy, out 6 7 of boredom and make them active member of the society 8 up north. 9 I'm not sorry I have done it on account 10 of -- due to the higher the cost. I realize that the 11 cost was higher and perhaps some of the people in 12 Industry who try would say: Well, it's much much 13 higher, it's out of reach. But let's compare the 14 social cost with the human aspect, that also the 15 effectiveness of the procedures here, tending. 16 In many instances I did it because I felt 17 the values I am putting on human being is higher than 18 the economics. I have done it, and many people 19 appreciate it. 20 When I see what's going on in tree planting, that we are hiring, and I have to get in that 21 22 total aspect of using people instead of technology, using man on a spot, get him involved, perhaps being 23 24 proud of this job there and technology, the choice will

be up to us.

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1	I know the economics, Madam, I know very
2	well it's much cheaper to spray everything in half an
3	hour or half a day and leave it and say it's going to
4	work.
5	Q. Right.
6	A. I am
7	Q. I think I understand now. Are you
8	simply saying this, Mr. Marek, that there are some
9	situations where, because of site conditions and site
10	characteristics, manual tending is a desirable thing?
11	A. I believe so.
12	Q. Is that the first part. And there
13	are some situations where, because the opportunity
14	exists to involve local people in carrying out the
15	work, it's desirable to manually tend?
16	A. That is correct, Madam.
17	Q. Are you also saying that in other
18	situations, again depending on site conditions, it is
19	more desirable to aerially spray and that it can be
20	less expensive to do so?
21	A. Madam, we have described ad nausea
22	now where I like to have it done and why.
23	Q. The answer was yes to the last
24	question?
25	A. The answer was that I like to see

1 these done as best as we could in the area where we 2 concentrate on timber production. 3 Q. The next comment at page 65, Mr. 4 Marek - and then I propose to leave this area - is the 5 second sentence in that first full paragraph. 6 A. 65 of the FFT testimony? 7 Yes, still the same place, page 65. I think it was over to your right. That's it, you have 8 9 got it. 10 A. Okay, 65. 11 Page 65, first full paragraph, the 12 second sentence. Again, you're talking about 13 efficiency and if I understood it, economics and you 14 are suggesting: 15 "The ground application of chemical 16 examples using spray guns and applying 17 chemicals to the base of trees would also 18 be more efficient in specific instances." 19 Again, Mr. Marek, now we are talking ground application of herbicides versus other tending 20 21 mechanisms. Can we agree that that too is a site-specific consideration? 22 A. That's correct, certain conditions. 23 Q. Could I ask you to go, if you would 24 please, Mr. Marek, to Tab 16 of the black binder 25

1	document.
2	A. I got the tab.
3	Q. Mr. Marek, the document that appears
4	at Tab 16, as I understand it, is the operating plan
5	for the Armstrong Crown Management Unit for the period
6	1980 to 1990, actually more specifically April 1st,
7	1980 to March 31st, 1990.
8	I understand that that was an operating
9	plan which was prepared during your tenure with the
10	Ministry and which was approved ultimately by you in
11	your capacity as a professional forester?
12	A. No, it was not. That had to be
13	approved by the timber branch and I was just one of the
14	signatories. I mean, I know you know, I approve it,
15	all right, at level I was, but it was higher up to
16	approve actually the plan.
17	Q. That's fine, thank you. And your
18	signature appears, although I profess the photocopy at
19	least in my book is not as clear as it might be.
20	A. It's clear, it's my signature, Madam.
21	Q. It's your signature?
22	A. That's right.
23	Q. And very briefly, Mr. Marek, could I
24	ask you to turn, if you would please, to page 24 of
25	this plan.

1	A. That's right.
2	Q. Sorry, in fairness to you we should
3	go back to page 22 first, so we can
4	A. I beg your pardon?
5	Q. In fairness to you you should go back
6	to page 22 first.
7	A. 22.
8	Q. You will see there that what is under
9	discussion is the spruce working group.
10	A. Right.
11	Q. And if you come now over to page 24,
12	23 if you would please.
13	A. Mm-hmm.
14	Q. I direct your attention to the last
15	subparagraph for the spruce working group in this plan,
16	it indicates that:
17	"Tending for all spruce working group
18	regeneration will be limited to aerial
19	spraying for 2,4-D as necessary upon
20	inspection."
21	A. That's right.
22	Q. All right. That was the proposed
23	operational provisions for tending of the spruce
24	working group?
25	A. That is correct.

1	Q. And then over at page 25 we are
2	dealing with the white birch working group; is that
3	correct?
4	A. That's right.
5	Q. And I direct your attention to the
6	last paragraph on page 25, the second sentence which
7	reads:
8	"Tending by means of aerial spraying will
9	most likely be required by the third or
LO	fourth year after seeding. Timing and
11	need for treatment should be determined
12	more closely at the time of second or
1.3	third year assessment."
4	A. Mm-hmm.
.5	Q. Again that was the tending plan for
. 6	that particular working group?
.7	A. Right.
.8	Q. And page 26 you are dealing with the
.9	poplar working group. I would ask you to look at the
20	last paragraph on page 26 dealing with tending in which
?1	it is indicated:
22	"Tending will be minimal and will be
!3	primarily aerial spraying of herbicide
14	only to the extent of ensuring
15	establishment of conifer regeneration."

1	And that pertained to the poplar working
2	group; correct?
3	A. That's right.
4	Q. And over at page 27, dealing now with
5	the balsam fir working group, I had directed your
6	attention to the third paragraph which reads:
7	"Tending will undoubtedly be required
8	before the fifth year after seeding and
9	will be in the form of aerial herbicide
10	spraying. As the regeneration progresses
11	beyond the fifth year further tending may
12	be required to suppress the balsam
13	ingrowth. This will only be accomplished
14	through a selection process by manual
15	cleaning and cutting individual balsam
16	stems."
17	A. Right.
18	Q. I take it with respect to the balsam
19	fir being proposed as approved in this plan, both
20	aerial spraying and manual cleaning on a selective
21	basis should occur; is that correct?
22	A. That's correct.
23	Q. All right. So in respect of all of
24	those working groups in the plan for the Armstrong
25	Crown Management Unit. it is clearly recognized that

1	aerial spraying of herbicides would be necessary for
2	tending treatments in each of the working groups
3	described?
4	A. That is correct.
5	Q. Now, on another related issue, Mr.
6	Marek, you told the Board I thought in your evidence
7	that the larger the extent of a clearcut the more
8	competition and, therefore, the greater the likelihood
9	of the need for chemicals.
10	Do you recall giving that eidence? Did I
11	understand that correctly?
12	A. Would you repeat it again, please?
13	Q. In reviewing my notes, what I thought
14	you said if your evidence was that the larger the
15	harvest area the more competition that will emerge
16	A. That is correct.
17	Qand, therefore, the greater the
18	likelihood of the need for chemicals?
19	A. For chemicals, yes; in other words
20	suppress the competition.
21	Q. Would it be fair for me to suggest
22	that that observation is based entirely on the size
23	aspect, that the larger the harvest the more
24	competition that will emerge.
25	A. The larger harvest, the more

1 competition is already present in the form of seed 2 trees or -- yes, that's correct. 3 Q. All right. And is it also fair to me 4 to suggest with respect to that observation it really 5 related to the likelihood of the need for tending as 6 opposed to the need of a particular type of tending; in other words, the larger the area of the harvest, the 7 8 more competition, the greater the need for tending? 9 A. That's correct. 10 Now, you also indicated to the Board, 11 at least according to go my notes again, Mr. Marek, 12 that it was your view that naturally regenerating 13 stands are less vulnerable than artificially regenerating stands to spruce budworm. 14 15 Did I hear you correctly when you said 16 that? 17 A. Again, this is an assumption based on 18 my observation of budworm infestation and the reaction 19 of the forest to it. The infestation which has 20 occurred in last five years, of course, is just one of 21 the phases, there were infestations before. And 22 observing it for last 40 years since actually the last infestation petered aware, yes, that's my observation. 23 24 Q. All right. Do I take from that, Mr.

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Marek, and again this is just an effort on my part to

1 understand the basis on which your evidence has been 2 given, that that suggestion is based on your 3 observations and not on any reported publications in 4 the scientific literature which study that phenomenon 5 or document it? 6 A. I would like so see as yet study 7 beside Gordon who documented anything about our 8 particular problem with budworm in the area. 9 There were some studies done in 1945 when DDT has been sprayed in Thunder Bay District, but since 10 11 then I didn't see any analytical documentation which 12 really proves to me that the effectiveness or the 13 really damage or effect of the ecosystem has been 14 quantified. 15 Q. All right. The difficulty that I had with the observation that was offered, Mr. Marek, is 16 that it was my understanding that there is nothing in 17 the scientific literature which suggests that naturally 18 regenerating stands are less vulnerable to spruce 19 20 budworm than artificially regenerating stands, and I suppose what I am asking you is: Can you point me to 21 anything in the scientific literature that establishes 22 23 that phenomenon? 24 I think in my evidence I have pointed 25 out, stated by the Europeans, who stated on numerous

2	risks, and by risk I mean including insect, diseases,
3	including budworm.
4	Now, I had to go way back in European
5	literature to deal with the risks in the first place
6	and the finally, of course, Alberta came with up with
7	the Dempster research, which is part of my
8	presentation, which also deals with the insect,
9	diseases; in other words, broadly speaking their risks
10	in management in forest planning.
11	I have welcomed this because I visited
12	the area in Alberta which really documented very well
13	the problem of risks, including insects and budworm is
14	an insect, as we know.
15	So I just assume that perhaps we are
16	lacking this documentation here in Ontario, especially
17	in the northern area, and I don't think we're going to
18	resolve this problem until somebody is going to
19	document these things, you know, results of some of
20	these studies.
21	Q. All right. So that I understand this
22	then, this is an assumption that you have made based on
23	your observations in the field; is that correct?
24	A. That's correct.

Q. Sorry, we have a little traffic.

1	A. That's correct.
2	Q. And you are unable to point me to any
3	scientific literature which actually looks at that
4	hypothesis, if I can put it that way, and establishes
5	one way or the other whether it is the case?
6	A. I have noted differences in the
7	degree of attack and degree of damages on the natural
8	regeneration of white and black spruce and planted
9	white and black spruce. That's all I can say.
10	There is there seems to me reason for
11	budworm to prefer planted trees. This has been
12	documented in Europe and perhaps should be documented
13	here. That's all I can say at this stage.
14	Q. Can you point me to any specific
15	scientific literature in Europe suggesting that
16	artificial regeneration is more susceptible to spruce
17	budworm than naturally regenerating stands?
18	A. They didn't say specifically spruce
19	budworm; no, they don't specifically say spruce
20	budworm. But Europe has a very specific insect like
21	Limatria Monacha. Limatria Monacha is a moth which is
22	very similar to the spruce budworm and which attacked
23	the European plantation periodically since 18, 19
24	century, and of the last outbreak occurred in the 20.
25	I remember that as a child and this was

1 so disastrous that all planted areas which were at that 2 time under the culture was destroyed, completely 3 destroyed. 4 No, I am not trying to compare 20's and 5 30's with technology of today, the knowledge we have, 6 but the the fact is that since then many scientists 7 have documented the kind of preference of insects, of 8 any insects to planted trees and it's a hormonal thing. 9 One of the things that are coming out very clearly is 10 hormones are playing very important part in this 11 attraction between the insect and the tree. It gives something stimuli to the insect to attack it, hormonal 12 13 activities. 14 Q. Let me make sure I understand then. 15 In terms of the literature to which you are referring, 16 first, it is not specific to spruce budworm? 17 A. It's Limatria Monacha, the Latin name of budworm. 18 19 0. I'm sorry, sir, I didn't hear you. 20 Α. I don't want to get into Latin names. 21 I thought that was the Latin. Q. 22 in trouble if it wasn't. It's a European moth which has a 23 24 Latin name, as anything.

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25

Q. So the literature does not per se to

- 1 the spruce budworm? 2 A. Not Canadian budworm. 3 Thank you. You needn't to do it now, Δ Mr. Marek, but I would be greatful if you could produce 5 to me the articles that you rely on in saving that 6 artificial regenerated stands any more vulnerable to 7 insect attack generally than naturally regenerated 8 stands. 9 Α. It's all yours, Madam. 10 0. Thank you very much. 11 Α. Here is a copy of it. (handed) 12 Thank you, Mr. Marek. You have 0. 1.3 produced to me, Mr. Marek, a document entitled 14 Stability of Spruce Forest Eco-systems, Proceedings of 15 the Symposium, Czechoslovakia, October to November, 16 1979. 17 Is there any particular article or 18 articles in this document upon which you rely in this 19 regard or the whole book? 20 You have to read the whole book in order to have a concept of stability. I'm sorry, some 21 of it is German, so perhaps you can improve your 22 23 languages.
- Q. Christmas comes earlier to all of us;
  doesn't it.

1	I understand your point, Mr. Marek, but
2	non-faceitiously is there any particular article on
3	which you rely or are you saying to me that the entire
4	symposium document supports the proposition you make?
5	A. All articles are interwoven, Madam,
6	with stability and with the risks in forest. And I
7	think that it will be worthwhile, not perhaps for you,
8	but forester to read that whole thing, what's in there,
9	and pick up some of this information.
10	Q. You will understand, no doubt, if I
11	suggest we will have to come back to this one.
12	MR. MARTEL: Who's reading it tonight?
13	MS. CRONK: All things are negotiable,
14	sir.
15	MR. FREIDIN: Is it in Czech?
16	MS. CRONK: It is in English.
17	THE WITNESS: Some of it is in Russian,
18	some of it German, some of it well, that shouldn't
19	bother you.
20	MR. FREIDIN: No, I understand all of
21	those.
22	THE WITNESS: That's right.
23	MS. CRONK: Q. Mr. Marek, could we turn
24	then generally to another issue, another aspect of your
25	evidence and to issues related generally to black

1 spruce. Your evidence throughout your slide 2 presentation, as I understood it, focused primarily on 3 black spruce? 4 That's correct. Α. 5 And you have told the Board that 6 black spruce indeed has been a focus of your work over 7 the course of your career? 8 Α. Here in Canada, ves. 9 0. All right. Your witness statement as 10 well focuses primarily on black spruce; is that 11 correct? 12 Α. Correct. 13 Now, one of the suggestions that is 14 contained in your witness statement, and we can go to 15 it if you wish, but one of the suggestions made at page 16 15 of your witness statement is that black spruce is --17 perhaps in fairness to you we should go to it, black spruce is unique to the boreal regions of Canada? 18 19 Α. Correct. 20 0. I am referring to the discussion at 21 the top of page 15. Do you see that? 22 Α. Right. 23 Q. It says that: 24 "Black spruce is a species unique to the 25 boreal regions of Canada..." and it goes

1 on to describe its desirability to the pulp and paper industry. 3 Do you have that? 4 (nodding affirmatively) 5 All right. I take it you were not 6 intending to suggest, Mr. Marek, that black spruce is 7 indiginous only to the boreal forest region of Canada, the range of black spruce is considerably broader than 8 9 that: is it not? 10 Yes, but of course there is spruce in 11 Minnesota, there is spruce in Finland -- research 12 station, but black spruce is the species which is 13 typical Canadian. 14 As you know, we have a region which 15 stretches around the pole from Canada right to Alaska 16 and to Soviet Union. You will not find black spruce 17 there, you will find it mainly in the boreal region of northern Ontario. 18 Q. My point, Mr. Marek, is simply this, 19 20 that you will find black spruce extensively throughout 21 North America, will you not, as well as the boreal 22 forest regions of Ontario? 23 A. No. Can you find black spruce in 24 central United States or midwest or west, no, you

don't.

1	Q. Do you think it is indiginous just to
2	the boreal forests of Ontario?
3	A. I think it's a fact.
4	MS. SWENARCHUK: The statement in the
5	text does not say the boreal regions of Ontario only,
6	but boreal regions of Canada.
7	MS. CRONK: Q. Do you think it is
8	indiginous only to the boreal forest regions of Canada?
9	A. From Newfoundland, through Quebec,
10	northern Ontario, parts of Manitoba, slightly into
11	Saskatchewan and Alberta and northern B.C., Alaska, but
12	very minor component.
13	I travelled across the whole region and I
1.4	just cannot see that boreal forest and black spruce is
15	something which is not synonymous with circumpolar
16	region of Canada.
17	Q. Could I ask you to turn to Tab 8, if
18	you would pleasem, of the black binder of documents.
19	Madam Chair, just before we do that,
20	could we mark the operating plan for the Armstrong
21	Crown Management Unit at Tab 16 as the next exhibit,
22	please.
23	THE WITNESS: What tab are you
24	MS. CRONK: I am going to be coming to
25	Tab 8, Mr. Marek. Just a moment.

1	MADAM CHAIR: This will be Exhibit 1542.
2	Could you describe that briefly?
3	MS. CRONK: Thank you. Perhaps it could
4	be described as the operating plan for the Armstrong
5	Crown Management Unit 1980 to 1990.
6	EXHIBIT NO. 1542: Operating plan for the Armstrong Crown Management Unit 1980 to
7	1990.
8	
9	MS. CRONK: Q. Then at Tab 8, Mr. Marek,
L <b>0</b>	there is an extract from a publication entitled Silvics
.1	of Forest Trees of the United States prepared by the
.2	Division of Timber Management Research, the U.S.
.3	Department of Agriculture, Washington Forest Service.
4	Do you have that?
.5	A. Yes, I'm aware of that.
.6	Q. All right. With respect to this
.7	issue of the range of black spruce, can I ask you to
.8	look at the next page, page 288, where it is indicated
.9	in the first paragraph:
20	"Black spruce is one of the most abundant
21	conifers of northern North America. It
22	spans the continent from Newfoundland and
23	the northeastern United States west and
24	northward to northwestern Alaska. The
5	range includes the boreal forest region

1	an extension of this region in Alaska and
2	the Acadian and Great Lakes/St. Lawrence
3	regions, as well as the north half of the
4	northern forest region. It grows south
5	to central British Columbia, southern
6	Manitoba, central Minnesota, southeastern
7	Michigan and Pennsylvania. Although most
8	of the range is in Canada, there are
9	important stands of this spruce in the
10	lake states, notably in Minnesota and
11	upper Michigan."
12	Do you agree with that general
13	description of the range of black spruce?
14	A. Yes. Madam Chairman, black spruce
15	can grow in Tennessee and Alabama, but what we are
16	talking about is the homogeneous stands of black spruce
17	occur only in northern Minnesota, some parts of and
18	the boreal region of Canada.
19	This statement is characterizing black
20	spruce as a tree which can grow any place. It grows
21	Q. I don't think there is any real
22	quarrel between us here, Mr. Marek, I am just trying to
23	get the context before the Board.
24	It also suggests that there are
25	significant - they use the word, the authors use the

- 1 word - important stand of this species in the lake 2 states, notably in Michigan and upper Michigan. 3 Minnesota and Michigan. 4 All I am saying to you is, in general 5 terms do you agree that the range of black spruce in 6 North America is as described in this publication? 7 Α. The range, if you talk about range, I suppose range is across the northern part of America. 8 9 0. If you look at the map, which appears 10 at the bottom of this page entitled The Range of Black Spruce, in the coloured area of the map it is quite 11 12 clear, as you suggested, that black spruce -- the range 13 of black spruce in Canada is quite extensive, but as 14 well that it extends, as the U.S. Department of 15 Agriculture suggests, into a number of states? 16 Yes, Ma'am. Look at that little Α. 17 chunk there which is -- can you compare it with this 18 homogeneity of black spruce from Newfoundland up to northern Saskatchewan. It grows around the Great 19 20 Lakes, the climatic condition of black spruce there, but knowing the extent of it, comparing to the boreal 21 22 forest of Canada, it's negligible. Q. I am simply suggesting to you and I 23 think you have agreed--24
  - A. I have already agreed.

25

1 Q. -- that there is broad range for black 2 spruce? 3 A. One of the best research has been 4 done in northern Minnesota by all people I know very 5 well. When you talk about Canadian tree, Canadian 6 mosaic of black spruce from Newfoundland... 7 Q. There is no doubt it is a very 8 important species in Canada. We are agreed on that, I take it? 9 10 A. Yes. 11 All I am suggesting to you is that 12 there is a very extensive range for the species in 13 North America and it should not be concluded that it is 14 particular only to the boreal forest region of Canada 15 because it isn't; is that correct? 16 A. Well, I think we are arguing here about little -- I just cannot see the significance of 17 18 it, Madam. 19 MS. CRONK: Madam Chair, could I ask that 20 this document be marked as the next exhibit, please. 21 MADAM CHAIR: Exhibit 1543. Could you 22 describe it, please. 23 MS. Cronk: Yes. Madam Chair, it is an extract from a publication entitled Silvics of Forest 24 Trees of the United States by the U.S. Department of 25

1	Agriculture, the Forest Service dating from 1965.
2	MADAM CHAIR: Two pages?
3	MS. CRONK: Yes.
4	EXHIBIT NO. 1543: Two-page extract from a
5	publication entitled Silvics of Forest Trees of the United States
6	by the U.S. Department of Agriculture, the Forest Service
7	dating from 1965.
8	THE WITNESS: In this context, Madam, you
9	must not forget it talk about silvics of black spruce
10	and rightly it points out that there is black spruce in
11	the United States, but significance of it is not
12	stated. This what bothers me in this connotation you
13	are putting here.
14	You are trying to impress me, here,
15	Madam, that black spruce in the United States is
16	represented to the degree, which I doubt, but in
17	silvics yes, that's a very important thing for the
18	United States to describe silvics of any tree.
19	Q. If you look at the last sentence, Mr.
20	Marek, and I take it no farther than this, I am trying
21	to establish the range of the species. In the last
22	sentence it suggests, as you did, that most of the
23	ranges in Canada, but there are important stands of the
24	species in certain of the lake states; is that correct?
25	A. That's correct.

1	Q. Then could I ask you to go to the
2	next tab in the black binder, if would would, please,
3	Mr. Marek, at Tab 9. This is an extract from a
4	publication by R.C. Hosie, if I am pronouncing that
5	correctly.
6	A. Yes, he's passed away a long time,
7	Madam. He was a personal friend of mine.
8	Q. A publication entitled Native Trees
9	of Canada, Canadian Forestry Service, and I would
10	direct your attention to the second page of the extract
11	dealing with black spruce and the habitat of black
12	spruce.
13	Do you agree that Mr. Hosie has
14	accurately described the habitat of black spruce
15	generally?
16	A. Well, what he said is obvious here.
17	Black spruce grows in many different sites and
18	climates. That's what I call the tolerance to it. It
19	tolerates all kind of condition.
20	"It is generally confined to sphagnum
21	logs, while farther north it often grows
22	on well drained slopes."
23	Yes, that's the shed.
24	"It has one great advantage over many
25	species in that besides being able to

1	reproduce from seed"
2	THE REPORTER: Excuse me, Mr. Marek, I
3	cannot hear you.
4	MS. CRONK: Q. Mr. Marek, perhaps there
5	is no need to read the whole paragraph, but do you
6	agree with its contents. Is that an accurate
7	description of the habitat of black spruce?
8	A. Very simplistic, but
9	Q. Is it right?
10	A. Right to some degrees. There are
11	some other conditions which black spruce this is
12	just a summary of very see, this is not a scientific
13	paper. It's a paper which should emphasize some of the
14	basic quality of black spruce. Very basic quality of
15	black spruce.
16	Q. In general terms is it a fair
17	description of the habitat of black spruce or
18	A. Yes.
19	Qis there some element that you
20	quarrel with.
21	A. No.
22	Q. Thank you.
23	MS. CRONK: Madam Chair, could that be
24	the next exhibit, please.
25	MADAM CHAIR: That will be Exhibit 1544.

1	MS. CRONK: That's an extract from a
2	publication by R.C. Hosie entitled Native trees of
3	Canada, Canadian Forestry Service. It should be two
4	pages.
5	EXHIBIT NO. 1544: Two-page extract from a
6	publication by R.C. Hosie
7	entitled Native trees of Canada,
8	Canadian Forestry Service.
9	
10	MS. SWENARCHUK: Madam Chair, I would
11	like to say with regard to this extract so described
12	and numerous others in articles that appear in the book
13	we received last week that counsel for the OFIA/OLMA
14	has produced as exhibits throughout some of the
15	extracts from larger articles.
16	It has been the practice normally here to
17	produce entire articles unless it's a whole book, et
18	cetera, and I will perhaps be reserving my right to
19	request that with regard to those extracts produced
20	that we have access to the entire articles.
21	MS. CRONK: That's understood, Madam
22	Chair.
23	MADAM CHAIR: Yes. The Board doesn't
24	want the entire material, but you can work that out
25	with Ms. Cronk.

1 MS. CRONK: There is no problem from our 2 perspective with that. 3 MADAM CHAIR: Ms. Cronk, it is helpful 4 for the Board if you give us the exhibit first and then go into a discussion of it. It's easier for note 5 6 taking. 7 MS. CRONK: I'm sorry. 8 MADAM CHAIR: Mr. Martel has reminde me 9 that it is break time. 10 MS. CRONK: Thank you. 11 --- Recess taken at 2:45 p.m. 12 ---On resuming at 3:10 p.m. 13 MADAM CHAIR: Please be seated. 14 MS. CRONK: Q. Mr. Marek, could I ask 15 you to go next, please, to Tab 10. 16 Strip group cutting in black spruce? 17 Q. Silvicultural systems, Tab 10. I 18 think you are one too far, sir, if you could back up 19 one. Tab 10. 20 Silvicultural System, yes. Α. 21 MS. CRONK: Madam Chair, this is an extract from a publication entitled Silvicultural 22 23 Systems for the Major Forest Types of the United States. Again, a publication of the U.S. Department of 24 Agriculture Forest Service, dating from 1973. I would 25

1	ask this be the next exhibit, please.
2	MADAM CHAIR: That's exhibit 1545.
3	MADAM CHAIR: How many pages, Ms. Cronk?
Ą	MS. CRONK: It should be seven, Madam
5	Chair.
6	MADAM CHAIR: Thank you.
7	EXHIBIT NO. 1545: Seven-page extract from a
8	publication entitled Silvicultural Systems for the
9	Major Forest Types of the United States. Again, a publication of
10	the U.S. Department of Agriculture Forest Service,
11	dating from 1973.
12	MS. CRONK: Q. Mr. Marek, could I ask
13	you to go to page 62 of this exhibit where a discussion
14	relating to black spruce commences.
15	In the first paragraph, again recognizing
16	this is a publication by the United States Forest
17	Service Branch of the Department of Agriculture. In
18	the first sentence of the first paragraph of page 62 it
19	is suggested that the black spruce type occupies about
20	two million acres in the lake states, chiefly in
21	Minnesota.
22	Do you see that?
23	A. Oh, yes, I'm aware of it.
24	Q. And then I would ask you to look, if
25	you would, please, at the last two paragraphs on this

1	page dealing with the characteristics of black spruce
2	and its establishment, and could you just take a momen
3	please and read two those two paragraphs, continuing
4	over to the top of page 36 and then I will have some
5	questions for you?
6	A. I am aware of it.
7	Q. With respect to the description of
8	establishment characteristics of black spruce and in
9	particular the last two sentences in the bottom of the
10	page 62 indicating that:
11	"Establishment requires a moist seedbed
12	free from competing vegetation and that
13	establishment of the black spruce is
14	generally successful on slow growing
15	sphagnum moss or where the surface layer
16	is removed by fire or compacted by
17	machines as in skid rows."
18	Do you agree, Mr. Marek, that that
19	description of the characteristics of the conditions
20	favourable to the establishment of black spruce is
21	generally accurate?
22	A. It's accurate. Yes, it's accurate,
23	but it doesn't bring the total scope of black spruce
24	establishment.
25	Q. It is certainly not a detailed

1	discussion, but inso far
2	A. Extremely simplistic, Madam.
3	Q. Insofar as it is a generalized
4	description you agree it's accurate?
5	A. Simplistic.
6	MADAM CHAIR: Excuse me, Mr. Marek,
7	wasn't your evidence that compaction in many
8	circumstances is a disincentive to black spruce growth,
9	but do you mean in this instance if it is synonymous
10	with the disturbance of the cover or the forest floor
11	that that is the conducive aspect?
12	THE WITNESS: Madam Chair, black spruce
13	is a "species" which is very tolerant to all kind of
14	disturbances, all kind of situations where perhaps some
15	species cannot get established, some can. But, again,
16	this is the complexity.
17	When somebody said that and this is a
18	typical kind of statement, black spruce will be
19	established on moist, say, mineral soil. Of course
20	that is the case. But when we talk about natural
21	regeneration, we are talking about many, many other
22	conditions which perhaps are conducive to black spruce
23	survival, germination and good growth and some are not.
24	And to go here and state in the evidence
25	that learned friend from United States, in general

- 1 observations, this is the kind of parameter for black spruce establishment under such and such condition, is 2 3 so awesome that I cannot say yes. 4 But there are hundreds of different 5 conditions which in some of them black spruce priorized 6 or grows very well, in some area with some of these 7 condition, no. And so I recognize these things, I have 8 read thousands times before this is something -- so 9 what? 10 MADAM CHAIR: Thank you, Mr. Marek. 11 THE WITNESS: Thank you. 12 MS. CRONK: Q. There are two aspects in 13 particular, Mr. Marek, in which I am interested. 14 first is the observation made regarding the general 15 successful establishment of black spruce on slow 16 growing spagnum moss. Now, I recognize that this is 17 not a detailed analysis of the establishment of black 18 spruce to which you have alluded, but do you agree 19 generally that that is the case? 20 Α. No. I have exceptions to that, 21 Madam, and reason being that I don't like that term 22 slow growing spagnum moss. As you know, there are 23 around 25 or 30 spagnum mosses types in the boreal 24 forest and they are very well represented in the FEC.
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O. The FEC classification?

1	A. FEC.
2	Q. Yes.
3	A. Some of them grows slowly, some of
4	them grows not as slow, some of them grows very
5	vigorously if exposed to certain environmental
6	condition.
7	So you see, Madam, what bothers me that
8	this is just like talking to the six-year-old child in
9	a public school about black spruce, and I don't accept
10	it because we should know better.
11	The condition are so specific that to
12	generalize slow growing spagnum, No. 1, there is no
13	spagnum which is stated in Latin names, you know, a
14	specific specie of spagnum; No. 2, the condition of
15	this growth does not explain why, where and this
16	conjunction with other species. So this is extremely
17	simplistic approach to any description of media we are
18	dealing with.
19	So I am puzzled here that this come up
20	for discussion. What is there to be discussed, Madam?
21	Q. Well, if you'll bear with me, perhaps
22	we will see.
23	A. Yes, yes, yes, I'm interested in
24	waiting.
25	O. You said in your evidence. Mr. Marck

1 on a number of occasions to the Board with respect to 2 your slides that feather mosses provide an excellent 3 seedbed for the establishment of black spruce. Do you 4 recall that evidence? That's your view? 5 Α. I never have stated that feather 6 mosses, feather mosses and I'm talking pleurozium 7 mosses - magellanicum, hylocomium - and now, you know, 8 we are going to get in very specific here. 9 Yes, that's fine. 10 That these in undisturbed condition Α. 11 are excellent media for growth. 12 0. In disturbed condition? 13 They support, they support, they can 14 growth of black spruce, but the ideal medias are 15 feather mosses which are compacted, feather mosses 16 which are slightly disturbed or fully disturbed by 17 fires; in other words, if the condition is as I 18 described. 19 And farthermore, there are much better 20 media for growth of black spruce than feather mosses. 21 Is spagnum one of them? 22 Spagnum is one of them. But spagnum, 23 there are 25 or 30 different species of spagnum in boreal forest, Madam. The FEC is dealing only what six 24

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or seven, I'm not -- six or seven.

1	There are some, some species which are
2	growing very vigorously, there are some species are not
3	growing vigorously, there are species where support
4	black spruce growth at the germination stage and
5	swallow them up because they are so fast growing, these
6	spagnum mosses. There are other mosses which do the
7	opposite, and
8	Q. So you're saying then that it depends
9	on the type of spagnum?
10	A. Type of spagnum and environment the
11	spagnum is growing in; in other words, specific,
12	specific types of germination media and the condition
13	around.
14	Q. If the environmental conditions are
15	appropriate and if the type of spagnum is the
16	appropriate one, I take it that there are spagnum based
17	circumstances which provide very excellent conditions
18	for black spruce establishment; is that correct?
19	A. For certain period of time.
20	Q. Yes.
21	A. For certain period of time.
22	Q. What do you mean by that?
23	A. In other words, time, they may strive
24	very well for year or two and they may be completely
25	desiccated and disappear in next two years, so

1	Q. You do not then agree with the
2	suggestion of the United States Forestry Service then
3	that generally speaking black spruce establishes well
4	on
5	A. Spagnum.
6	Qspagnum environment?
7	A. It may get established but it may
8	also disappear or be swallowed up by spagnum which
9	swallow the seedlings and they disappear.
.0	Q. You regard the statement as being an
.1	overstatement?
.2	A. Oh, I think this is again, Madam,
.3	we are dealing with a publication by United States
. 4	Forest Service which is talking about certain
.5	condition, obviously, which they have found in their
.6	peculiar niche or in the area.
.7	Now, I am speaking now for boreal forest
.8	in here which is far away from United States, and while
.9	in this presentation, and you may accuse me using
0	European as too far away places, which perhaps do not
1	apply here, I may tell you that according to my
22	knowledge the different condition of boreal forest do
13	present quite different conditions, sometimes, not
4	always, but in many instances they do, and we have to
:5	be very careful not to generalize saying spagnum is

1	good or spagnum is	bad and black spruce is growing on
2		am not in Minnesota, so
3		Well, it is the need to be careful
4		
		that concerns me, Mr. Marek. Could I
5		age Roman numeral (iv) of the
6	executive summary of	of your witness statement for Forests
7	for Tomorrow.	
8	A. I	Right.
9	Q. I	Panel 3.
10	А. І	Page?
11	Q. I	Page Roman numeral (iv)?
12	A. F	Roman (iv), right.
13	Q. I	Paragraph 9.
14	A. F	Right.
15	Q. F	and I direct your attention to the
16	last sentence in wh	ich you indicate:
17	"The	expansion of spagnum at the
18	exper	se of pleurozium mosses is an
19	indic	ator of a water problem and, where
20	it oo	curs, seedlings established on
21	spagn	um showed poor growth."
22	That'	s a suggestion that in those
23	conditions poor gro	wth will result indiscriminately as
24	between types of sp	agnum; is that correct. Is that
25	correct, you're not	distinguishing between spagnum type

1 in making that statement? 2 Α. No, no. Again, we are talking about 3 specific type of spagnum in specific condition. 4 Q. Well, I'm sorry, sir, where do you 5 say that you're talking about only certain kinds of 6 spagnum in making that statement? 7 A. I say in forestry we have got to 8 distinguish these things. 9 Q. Do you do so at page (iv)? 10 I think that this is a generalized 11 statement which deals with more in detail with research 12 done by ... 13 Q. All right. Could you go to page 22 14 then, please, in the detailed section of the witness 15 statement. 16 A. Mm-hmm. Okay, Vegetation Response to 17 Changing Moisture Conditions. 18 Q. Yes. I direct your attention, Mr. 19 Marek, to the fourth sentence in that paragraph. 20 Α. Right. 21 Q. Which reads as follows: "The fact that the site has been taken 22 23 over by spagnum mosses is a good indication that something detrimental has 24 happened to it because of the changing 25

1	water table."
2	A. Correct.
3	Q. You are not distinguishing there
4	between types of spagnum; are you?
5	A. I am talking about water level here,
6	Madam.
7	Q. Yes.
8	A. I am talking about water level.
9	Q. I understand.
10	A. And you have to be very careful,
11	because spagnum respond to this.
12	Q. I understand, but you are not
13	distinguishing here between types of spagnum; are you?
14	A. I think that spagnum which grows here
15	on the certain condition, and should I have used the
16	Latin name here, perhaps I should have. I am negligent
17	of using proper terminology, saying such and such
18	spagnum on such and such condition.
19	May I bring something here. I think that
20	we are still fighting, Madam Chair, here with condition
21	which I don't think are understood. May I use for
22	second, with your permission counsel, to declare here,
23	draw a picture what I'm talking about.
24	Q. Does it relate to the spagnum moss
25	discussion we've having now?

1	A. Oh very much so, very much so.
2	Q. As you wish.
3	A. Well, perhaps I don't even have to.
4	Madam Chair, do you remember the slide I have shown you
5	where sphagnum moss, certain type of spagnum, is being
6	established on that puddle, on that water saturated
7	rock there.
8	MADAM CHAIR: Yes we do, Mr. Marek.
9	THE WITNESS: Okay. Okay. What's
10	happened there, that it once the water condition are
11	fairly static for few months or even few years that the
12	sphagnum get established there and present the
13	floristic indicator of that site condition.
14	Here comes a seed dropping on that
15	spagnum, germinates and establishes itself as tree.
16	The water level goes down after two years, the spagnum
17	goes down and eventually does not have support of that
18	water table which was existence at that time and water
19	disappears and spagnum is dry and desiccated on the
20	bottom of that rock.
21	Now, that spruce which was established
22	stayed there only as long as spagnum moisture maintain
23	its existence, once the moisture went down, of course,
24	the spagnum went and the spruce went.
25	MS. CRONK: Q. Is it far to say, Mr.

1	Marek, that depending on the type of spagnum and the
2	type of site condition in which it appears, spagnum can
3	provide an excellent seedbed for black spruce?
4	A. For temporary, temporary.
5	Q. You said that, for temporary
6	establishment?
7	A. For temporary.
8	Q. Do you suggest that black spruce will
9	establish for longer periods of every time with
10	compacted feather mosses than with appropriate types of
11	spagnum?
12	A. Compacted feather mosses with
13	seedlings on it if not exposed to really drastic
14	changes of solar radiation will support this moisture
15	system for longer period than this fluctuation of what
16	happened in the disturbed site.
17	Q. Is it important then when we read
18	your witness statement when you are discussing spagnum
19	to bear in mind that there are different types of
20	spagnum and, in some circumstances, spagnum can produce
21	ideal growing situations for black spruce?
22	A. Spagnum can produce a good
23	environment for growth of the seedling as long as it's
24	nurtured by water levels which is below; in other

words, when the water level rises, when the water goes

- down; in other words, the water levels eventually 2 subside or get under the stable condition, then spagnum 3 may have a problem and so does black spruce which is 4 growing on that condition. 5 Q. And in appropriate circumstances 6 sphagnum can provide an excellent medium for seedling 7 establishment? 8 Under certain condition sphagnum is 9 good germination media, however, spagnum have to maintain it condition of moisture in order to provide 10 11 an ideal growth for black spruce. 12 Q. So it's important then; is it not, 13 not to generalize about whether site conditions like the presence of spagnum generate good or bad seedling 14 15 establishment conditions for black spruce? 16 A. No, I don't think in the contents 17 what the scientist found, and we should actually go 18 into his statement and my statement, because I think he 19 support my idea that the interpretation of application of generality is a problem of all statement here, any 20 21 statements I have witnessed so far, we are still 22 lacking the proper terminology because this is not, I suppose, following for it. 23 24 But with your permission, Madam Chair, I
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could have flood you with Latin names of all sphagnums

and you will enjoy probably or you are going to throw me out, those are two things you have available for you, but when we talk forestry, Madam Chair, I like to Δ stress again from the beginning, if I leave here tomorrow you being confused about the intricacies and science of forestry, then I have failed. Perhaps we should go into these things more in detail in order to be clear what we are talking about.

- Q. All I'm suggesting, Mr. Marek, is that if on the basis of what you have now told the Board it would be inappropriate to draw any inference from your evidence that spagnum, per se, is not an appropriate medium for seedling establishment for black spruce, that would be wrong of us to conclude that from your evidence; is that right?
  - A. Madam, sphagnum is usually an indicator for poorer sites, poorer sites condition in Clay Belt and also right here on Domtar.

Where you have spagnum it is always site class 2 and 3 or the other; when you have pleurozium mosses you expect to have a better site class; in other words, better productivity.

So when we, in this overall mishmash of statements, say that spagnum or certain species of spagnum is subject to such and such a condition, we are

talking forestry in detail, we talk forest ecology and 1 2 unfortunately, we don't. 3 Q. Mr. Marek, could I ask you to go to 4 page 26 of your witness statement, please. 5 MR. MARTEL: Could I ask a question. 6 MS. CRONK: Absolutely, sir. 7 MR. MARTEL: Because I'm not sure if I'm 8 alone, but I can't recall where you said that spagnum 9 was bad, I think you said it was site-specific 10 depending on the type. I'm just trying to get this straight because I'm reading this statement here in 11 12 cross-examination, and what I thought you said - and maybe I didn't understand what it was you said - but I 13 14 can't recall you saying that sphagnum was bad. 15 THE WITNESS: Of course not, spagnum, 16 spagnum is there where it ought to be; in other words, 17 the site condition dictate with the forest itself the 18 condition of spagnum, this is inter-related, Madam 19 Chair. 20 The implications of saying that spagnum 21 is better or pleurozium is better is because FEC clearly point out, and so is research done by gentleman 22 I have quoted here, that lower quality identifies lower 23 quality site; in other words, site productivity usually

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is very heavily represented by spagnum.

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1	Alder for instance, alder tree or alder
2	branch, is representing other condition which is one
3	way or the other. Then pleurozium is indicator of site
4	which is probably the best, very productive site.
5	So this is showing to me that the forest,
6	as we understate and understand, is dictated by
7	multiplicity, multiplicity of factors, eventually
8	serving or disserving the black spruce stand, and
9	because black spruce stand can establish itself on many
10	sites of different moisture regimes, of different
11	productivity, the confusion comes in: Where is better,
12	is that spagnum or is that pleurozium or so it's a
13	complex thing.
14	MS. CRONK: Mr. Martel, if I may.
15	MR. MARTEL: Go ahead.
16	MS. CRONK: Q. Mr. Marek, dealing with
17	page (iv) of your witness statement, and perhaps we can
18	clarify this quite quickly.
19	Whether it's page (iv) or page 22, or our
20	notes of your oral evidence to the Board with respect
21	to your slides, was it your intention at any time to
22	suggest that spagnum site conditions do not provide a
23	good medium for the establishment of black spruce?
24	A. What I have said that the increase of
25	spagnum in cut-over site is showing me or showing to

1	the scientists who investigate it that the site is
2	being taken over by species which not belong there
3	under these conditions.
4	In other words, increase of spagnum means
5	increase of water table, increase of water table means
6	term, higher acidity, which means that the spagnum is
7	striving under these conditions where it shouldn't be
8	striving, that the spagnum is taking over sites which
9	were original pleurozium sites, indeed degrading these
. 0	sites to the degree for black spruce well-being.
.1	Can I explain it more clearly?
.2	Q. I understand, Mr. Marek. And where
.3	spagnum establishes itself in those circumstances, can
. 4	it nonetheless provide a good establishment environment
.5	for black spruce?
.6	A. Until the water level goes down and
.7	it eventually get leveled off.
.8	Q. All right. And then you have
.9	referred in your witness statement at page 26, if I
20	could ask you to go to that, please, to the work of
21	certain researchers regarding this issue of the
22	establishment of black spruce.
23	A. Right.
24	Q. And at page 26 you suggest, as we

have reviewed over the last few minutes, that compacted

feather mosses especially can be an excellent medium 2 for seedling establish. 3 Α. That's correct. 4 All right. And what I'm suggesting 5 to you is presupposing no water surplus or water deficit problem, spagnum mosses can also be an 6 7 excellent medium for seedling establishment; is that an 8 appropriate condition? 9 Α. Madam, you cannot presuppose. 10 0. I'm asking you, sir, if you accept. accept for the purposes of my question to you, that 11 12 there is no water depletion or water surplus problem on 13 a site but there is the presence of spagnum moss. 14 A. But those two things not get 15 together, Madam, you cannot talk about in isolation spagnum and water levels, these two are inter-related. 16 17 You have a water level coming up, spagnum is coming up; 18 you have a water level going down, spagnum will 19 eventually desiccate or will be not as productive as it 20 was before under the current conditions. 21 Q. Even in those circumstances, Mr. 22 Marek, is it your opinion, based on your experience, 23 that where spagnum is present on site it can 24 nonetheless provide a good environment for

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establishment of black spruce, or do you think that

25

1	that is not so?
2	A. It provides the environment for black
3	spruce because spruce - and we have read here that
4	spruce can get established on various conditions, you
5	can get him going, you can get germination going, you
6	can have seedling started, but the problem is with
7	similar dynamic which is natural.
8	In other words, what I am saying, we are
9	introducing factors here which will affect the final
.0	product, and that is black spruce, by manipulating the
.1	forest floor.
.2	Is that clear to you, Madam Chair?
.3	MADAM CHAIR: Yes it is, Mr. Marek. I
.4	thought the point that Ms. Cronk was trying to get at
.5	was if you had mature forest and, for example, you were
.6	looking at natural regeneration of seedlings
.7	THE WITNESS: In the mature forest.
.8	MADAM CHAIR: In a mature forest and in
.9	one stand there was a feather moss component
20	THE WITNESS: Forest floor.
21	MADAM CHAIR: And in the other stand
22	there was a spagnum component, they were both mature
23	forests, would the seedling do equally well in spagnum?
24	THE WITNESS: No, they wouldn't do as
5	well in spagnum because spagnum is less productive

1	site.
2	MADAM CHAIR: All right.
3	THE WITNESS: And it's very clearly
4	stated in the FEC.
5	MADAM CHAIR: Thank you.
6	MS. CRONK: Q. Then I do understand your
7	evidence, and at page 26 on that issue you refer to
8	work done by Vidlak and Losee in the Abitibi woodlands
9	laboratory in northern Ontario.
10	A. Correct.
11	Q. And the quote as amended in the
12	errata that's been filed, you quote from one of the
13	research papers published as a result of that
14	experimental work; is that correct?
15	A. That's correct.
16	Q. Could I ask you to go, if you would
17	please, to page sorry to Tab 11 of the binder of
18	documents that has been provided to you.
19	A. Mm-hmm.
20	Q. At Tab 11 appears an article by
21	S.T.B. Losee of Abitibi Paper Company Limited, as it
22	was then called. Do you have that?
23	A. Correct. Mm-hmm, I have it here.
24	Q. Could I ask you to turn back to the
25	start of the article, please, at Tab 11.

1	A. Here.
2	Q. I believe you are at the wrong tab,
3	Mr. Marek. Tab 11.
4	A. Strip Group Cutting in Black Spruce.
5	Q. Yes, the article by Losee entitled:
6	Strip Group Cutting in Black Spruce at the Abitibi
7	Woodlands Laboratory.
8	A. Correct. I am very familiar with
9	this research, yes.
10	MS. CRONK: This appears, Madam Chair, in
11	the source book provided by Forests for Tomorrow for
12	this panel of evidence. I don't know if it needs a
13	separate exhibit number, unless that's your preference.
14	MADAM CHAIR: No, it doesn't. What
15	exhibit number is this?
16	MS. SWENARCHUK: It's in 1515B, Madam
17	Chair.
18	MADAM CHAIR: Thank you.
19	THE WITNESS: This is part of my source
20	book; isn't it. That's correct.
21	MS. CRONK: Q. Mr. Marek, this is the
22	article; is it not, from which you have quoted at page
23	26 of your witness statement?
24	A. "It is evident that under the
25	shade condition existing on these

1	quadrats"
2	Q. Yes.
3	A. Is this the article from which you
4	quoted?
5	A. I think so it is, or very similar.
6	Q. All right. Well, the reference is to
7	Losee, 1966.
8	A. Mm-hmm.
9	Q. And this is an article by Losee, 1966
10	which appears in your source book.
11	A. Right.
12	Q. Could I ask you to go to page 3 of
13	the article, if you would please.
14	A. That's correct, I have it here.
15	Q. Now, there's a discussion that begins
16	at the bottom of page 3 in the second column regarding
17	the establishment of black spruce.
18	A. Mm-hmm.
19	Q. And I would draw your attention to
20	the second full paragraph beginning, "The compacted
21	spagnum", do you see that?
22	A. I have right page, it's page 3.
23	Q. Yes, page 3 under establishment.
24	A. On left side under germination.
<b>2</b> 5	Q. Under establishment, it begins with

1	the words, "It has been shown that"
2	A. Establishment. Oh, okay. Okay. I
3	got it, "The compacted spagnum"
4	Q. And the authors indicate that:
5	"The compacted spagnum and litter show a
6	definite superiority as media for
7	establishment of black spruce over
8	Uncompacted seedbeds of the same
9	material. With feather mosses the
10	difference is small and indicates a
11	possible slight superiority of the
12	uncompacted seedbed."
13	And it goes on to discuss the findings of
14	the research conducted by the authors.
15	A. Right.
16	Q. Can we agree, Mr. Marek, that the
17	article which you quoted at page 26, the research done
18	by Mr. Losee and Mr. Vidlak, appears to suggest that
19	compacted spagnum, like compacted feather mosses,
20	provides an appropriate environment for the
21	establishment of black spruce?
22	A. Wait a minute. No, no, I
23	Q. My only point, Mr. Marek, is that
24	you can't conclude that invariably black spruce is not

1	associated with spagnum; isn't that the case?
2	A. Madam Chair, in Raithe, Lorne Vidlak
3	and Stan Losee experimented with compacted sphagnum
4	over boulder pavement.
5	In other words, may I have something to
6	write with. You have a boulder pavement which is made
7	of boulders just like cobbles on the streets. There is
8	a boulder pavement which made of overlying silts or
9	silt descents, whatever, with a boulder pavement that
10	thick, and here is sphagnum growing on, on top, in some
11	cases also pleurozium.
12	What they did there, and I was right
13	there when they did it, they compacted this spagnum by
14	tramping it up so it can have a greater moisture
15	content. It's that moisture what does it to that
16	spagnum, that's why he states, in this case the
17	sphagnum moss compacted was a good germination media.
18	Q. You agree?
19	A. I agree. But it was compacted on
20	boulder pavement, it was not compacted or treated under
21	original, say, beads or muck or some other strata of
22	the soils which encourage hylo to compact over the
23	boreal pavement.
24	I was right there when we did it, matter
25	of fact, we experiment with so many strategies: How

1 one can improve not only establishment of black spruce 2 but also it grows and these compacted zones between 3 spagnum and pleurozium have shown certain identity here, and again this is not isolated thing, one must 5 not isolate this with the condition of the total 6 environment. 7 In other words, when this was cut-over, 8 large area cut-over exposed to solar radiation, exposed 9 to drying out, you have one condition; if you have it 10 under strip cutting, as they did in Raithe, protected 11 under shirt, you have completely different condition. 12 It's all fine for that moisture contents in these 13 strata of the forest floor. 14 MR. MARTEL: What would have happened if 15 the forest floor had dried out, the spagnum had dried 16 out? 17 THE WITNESS: The spruce goes with it. 18 Spruce goes with it; in other words, it will disappear. 19 MS. CRONK: Q. Sorry. 20 A. The same thing happen with pleurozium, if you going to have on this kind of 21 condition, boulder pavement and any mosses on top or 22 any, if it's exposed it may be gone. 23 Q. Has it come to this then, Mr. Marek, 24 if you have extreme conditions, whether it's feather 25

mosses that have dried out or sphagnum that has dried 2 out, that's unproductive for spruce, you're going to 3 have a problem? Δ You have a problem. 5 And if you have too much moisture, 0. whether it's feather moose or spagnum, you're going to 6 7 have a problem? 8 That's right. Α. 9 But we should not conclude that the 10 presence of spagnum per se, although it's an indicator 17 you say--12 Α. Yeah. 13 --of water levels, is a bad medium 14 for spruce because that needn't be the case? 15 No, no, and just opposite, when you 16 have lots, if this water level will rise to this level 17 over the boulder, the sphagnum will have a good time to 18 proliferate and will be establishing certain 19 priorities, whereas when we dry out feather mosses 20 never can do that, the feather mosses going to be 21 there, dried out, saturated with water, because they 22 are not compact will not be able to hold water, so the 23 changes in water level, everything goes. 24 And that's true with both media? 0.

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Generally speaking, ves.

Α.

25

1 Q. If you dry either one out you have 2 got a problem? 3 A. If you dry -- well, again, spagnum is 4 not a media which dried out very quickly, because 5 spagnum has texture of the fiber and everything is 6 different from pleurozium moss. 7 Q. Yes, but should it occur? Should it 8 occur--9 Should it occur? A. 10 --it's the same kind of problem? 0. 11 When you haven't got moisture, Madam, Α. 12 you haven't got regeneration; in other words, amount of 13 water which is absorbed and can be nurtured here for 14 germinant of the black spruce and it grows. 15 Is that clear, Madam Chair? 16 MADAM CHAIR: Yes, Mr. Marek. 17 MS. CRONK: Q. You also, Mr. Marek, 18 during the course of your slide presentation gave 19 considerable evidence to the Board concerning the effects of wild fire, natural fire compared to the 20 21 effects of harvesting. 22 Α. Right. Q. And you dealt with that as well in 23 your written witness statement? 24 25 A. Yes.

1	Q. Quite apart from the circumstances in
2	which black spruce establishes quickly or
3	appropriately
4	A. Yes.
5	Qcan we agree, Mr. Marek, just
6	dealing with the issue of wild fire and harvesting,
7	that wild fire obviously doesn't discriminate between
8	young and old stands, wild fire can occur in any
9	age-class of forest, young or old; is that correct?
10	A. Do you want me to agree to that?
11	Q. Yes.
12	A. No, I can't.
13	Q. Does it only occur in old stands?
14	A. No, no, it does not occur, but the
15	effect of fire, the spread of that, you talking about
16	different fire.
17	Madam, if you have a stand of different
18	age-classes, say, there is a young age-class here where
19	the movement say that is tree, that's floor, you
20	have an overmature stand here, it's obvious to anybody
21	should be that the spread of fire and the effect of the
22	fire will be different from here to here because you
23	have a completely different energy output, input, and
24	you have combustion different. So how can one say the
25	effect will be the same as here, no it will not

1	Q	).	Well, actually I didn't say that, Mr.
2	Marek. The pro	pos	sition that I put to you was that fire
3	doesn't discrim	nina	ate between young and old stands, it
4	can occur in ei	the	er?
5	A	۸.	But okay.
6	Q	).	Are we agreed so far?
7	A	۸.	As long as there is fuel, as long as
8	there is fuel		
9	Q		Yes.
10	A	۸.	it burns.
11	Q	) .	Right.
12	A	١.	Now, of course
13	Q		You can
14	A	٠.	How does it burn, that's the
15	question.		
16	Q		Mr. Marek
17	A	۸.	Okay.
18	Q		Let's come at this in pieces.
19	A	٠.	Okay.
20	Q		You can have a very intense fire in a
21	young stand, yo	u c	can have a very intense fire in an old
22	stand, mature s	tan	d; is that right?
23	A		Madam, no burning
24	Q		Mr. Marek
25	A		Burning elements.

1	MS. SWENARCHUK: Excuse me.
2	MS. CRONK: I'm sorry.
3	MS. SWENARCHUK: Yes. I think the
4	witness is entitled to answer the question in the words
5	that express his thoughts.
6	MR. CRONK: Quite right.
7	MADAM CHAIR: I think we might.
8	MADAM CHAIR: I think we might let's
9	see what the next part of the question is. Maybe we
10	can hear where Ms. Cronk is going.
11	THE WITNESS: Fine.
12	MS. CRONK: Q. My only point was quite a
13	simple one and that is, leaving aside for the moment
14	the extent of the fire or its duration, my question
15	quite simply was can you get natural wild fire in
16	undermature and mature stands?
17	A. Correct.
18	Q. Okay.
19	A. It burns because there is fuel.
20	Q. You can have very intense fires of
21	the kind that you have described to the Board in your
22	slides in undermature stands as well as overmature
23	stands?
24	A. That's where we differ. You said it
25	right in the first instance. You said you repeat

1	yourself. I immediately said, no, intensity of fire
2	here in that young stand and in that old stand is
3	different one; in other words, you can have a fire
4	going through, but what that fire will do in this young
5	stand and this old stand are two different things.
6	Q. Is it your evidence, Mr. Marek, that
7	based on the burn indices in the Province of Ontario
8	that you do not get intense fires in young forests,
9	undermature stands? Is that what you are telling this
10	Board?
11	A. In many conditions, Madam, the fire
12	burns just through shear presence of air much quicker,
13	much faster, much intenser than here because the lack
14	of oxygen which feeds fire intensity. If you haven't
15	got a fire going in this stand or slower intensity is
16	because lack of oxygen. These stands which are young
17	and dense and will not burn as intense.
18	As a matter of fact, we made experiments
19	where we tried to initiate good, hot fires in younger
20	stands and we couldn't get it going because there is
21	not enough oxygen to lead the spread and intensity of
22	the fire. Where about here there is nothing but oxygen
23	and goes through. Is that clear?
24	Q. I take it the answer was yes, that it
25	is your opinion that

1	A. Well, of course
2	Q. It is your opinion that you do not
3	get, according to the fire indices of Ontario, intense
4	fires in young stands?
5	A. You get completely different burning
6	index and burn effects and everything in younger
7	stands, but it depends on the species, Madam. It
8	depends on many conditions, up slope, down slope.
9	Again, we simplify things which are not very simple or
10	we tryrye to simplify it and I object to it. This is
11	not the science of forestry.
12	Q. Is it then site specific, site and
13	species specific?
14	A. Very much so. Madam, let's have a
15	slope like this, here is young stand, here it is older
16	stand, different variation of age classes. This slope
17	again by itself affect the behaviour of these fires in
18	these two different stands.
19	Q. You are suggesting that the intensity
20	in the older stands will be invariably different than
21	in the younger stands?
22	A. Because there is oxygen, lots of air
23	movement.
24	Q. You have also said, Mr. Marek, and
25	perhaps I should take you to page 13 of your witness

1	statement, aga	ain the Forests for Tomorrow one.
2		A. Page 13?
3		Q. 13.
4		A. Correct. I have page 13.
5		Q. At the bottom of the page you are
6	discussing las	rge air clearcuts and wild fire and you
7	indicate:	
8		"species which never proliferate
9		immediately after wild fire under natural
10		circumstances, may dominate the site
11		after large area clearcutting."
12		Do you see that?
13		A. "species which never
14	,	proliferate immediately after wild fire
15		and under natural conditions "
16		Q. Do you see where it says that?
17		A. Yes.
18		Q. At the bottom of that page?
19		A. Right.
20		Q. You go on to provide several examples
21	and you refer	to poplar and birch among others?
22		A. Right.
23		Q. Is that your opinion, Mr. Marek?
24		A. Of course it's my opinion.
25		Q. Mr. Marek, I have provided to you at

1 Tab 12 of the black binder a series of extracts from a 2 number of scientific publications available in the 3 literature? Δ Α. What page? 5 0. Tab 12. 6 That's right. Α. 7 And we can go through these, Mr. 8 Marek, if that's your wish, but can I suggest to you 9 and you can indicate now whether you agree or disagree that these articles make it very clear that after 10 11 clearcutting aspen can and does occur as an emergent species in the same way as it can after wild fire. 12 13 You disagree? 14 Α. I disagree. 15 Q. All right, sir. Can I ask you to 16 take a look at the first, please. 17 MADAM CHAIR: Is this going to be an 18 exhibit, Ms. Cronk? 19 MS. CRONK: Yes. Sorry, Madam Chair. 20 MS. SWENARCHUK: In this case can we be 21 looking at the entire article rather than extracts. 22 MS. CRONK: I will be glad to provide 23 those to Ms. Swenarchuk if that's her wish, Madam 24 Chair. The portion to which I intend to refer, which 25 were provided last week, are those at this tab and I

would ask that they be marked in this form. 2 If my friend wishes access to these 3 entire articles, that can be arranged. 4 MS. SWENARCHUK: Yes, I would like that 5 please. 6 MADAM CHAIR: These excerpts will be 7 Exhibit 1546. What are they? 8 MS. CRONK: A series of extracts, Madam 9 Chair, from a number of publications. 10 The first is from an article by Kelsal et 11 al, the Canadian Wildlife Service, dated 1977, 12 concerning the effects on the ecology of the boreal forest with particular reference to the Canadian north, 13 14 a review and selected bibliography and that extract is four pages long. Sorry, it is effects of fire on the 15 16 ecology on the boreal forest. 17 The second extract is from a publication 18 entitled Fire Effects in Northeastern Forest Aspen by Rouse, of the U.S. Department of Agriculture Forest 19 20 Service, 1986, and that is three pages long. The third is an extract from a 21 publication entitled Fire in the Environment, Symposium 22 Proceedings, May 1972, published by the Forest Service, 23 U.S. Department of Agriculture and in particular an 24 extract from an article by Scotter et al appearing in 25

the symposium publication, and that's four pages long. 1 2 The next extract is from a publication 3 entitled Boreal Mixedwood Symposium sponsored by the 4 Ontario Ministry of Natural Resources in the Great 5 Lakes Forest Research Centre, April 1981, and it is an 6 extract from a paper by Whitney et al, and that's five 7 pages long. 8 MADAM CHAIR: Thank you, Ms. 9 MS. CRONK: The next extract, Madam 10 Chair, is --11 MADAM CHAIR: How many are there? 12 MS. CRONK: I believe there are two more altogether in the same tab. Some of these are complere 13 textbook books and that's why they weren't reproduced. 14 15 The next is an extract from a document entitled The Role of Fire in Northern Circumpolar 16 Ecosystems edited by Wine et al and it's a text by John 17 Wiley and Sons, 1983, and in particular it is an 18 extract from an article by van Wagner that appears in 19 that text as Chapter 4. That is three pages long. 20 21 From the same text, an extract from 22 Chapter 11, an article by Viereck et al on the Effects 23 of Fire in Black Spruce Eco-systems of Alaska and 24 Northern Canada. That's two pages long. 25 Then the final one, Madam Chair, Mr.

1 Martel, is from a publication by Graham et al entitled 2 Aspens, Phoenix Trees of the Great Lakes Region, 3 University of Michigan Press, an extract from Chapter 4 11 -- that might be Chapter 2 actually, it is Roman 5 numeral. I think it is Chapter 11, entitled the 6 Century of Aspens and that's 6 pages long, and in the 7 aggregate those are the documents that appear at Tab 12 8 as Exhibit 1546. 9 ---EXHIBIT NO. 1546: Documents appearing at Tab 12 of Publication by Graham et al 10 11 MS. CRONK: Now, Madam Chair, in light of 12 the answers that I have received from Mr. Marek to the 13 proposition that species such as aspen and birch do 14 proliferate naturally after wildlife as they do after 15 clearcutting, his view being they do not, I intend to 16 spend some time on these articles which that cannot now 17 be avoided, an given the hour I would prefer that we do 18 that in the morning, if possible. 19 MADAM CHAIR: Is that agreeable with you, 20 Mr. Marek? 21 THE WITNESS: Oh, yes, it's fine. 22 Madam Chair, may I perhaps say a few words back to my slides? 23 24 MS. CRONK: I would ask, Madam Chair, I 25 be permitted, if appropriate, to deal with this in the

- 1 morning with Mr. Marek and we will deal with the 2 articles specifically and get Mr. Marek's views at that 3 time about them. 4 MADAM CHAIR: All right. Mr. Marek, if 5 you haven't reviewed these you might want to look them 6 over. 7 THE WITNESS: I have read them in the 8 past. I know these publication. As a matter of fact, some of them are part of our FFT source book. 9 10 MS. SWENARCHUK: Madam Chair, I will have 11 to speak to Mr. Marek with regard to the undertaking 12 that was given earlier. I just inform everyone I am going to do that. Perhaps Mr. Pascoe could accompany 13 14 me. 15 MADAM CHAIR: To discuss the... 16 MS. CRONK: The undertaking regarding the 17 letter that has been suggested that CFS has. 18 MADAM CHAIR: Yes. 19 MS. CRONK: I take no objection. 20 MADAM CHAIR: No one has any objection to that, do they, for Ms. Swenarchuk to talk to Mr. Marek? 21 22 MS. SEABORN: No, Madam Chair. 23 MADAM CHAIR: I don't think Mr. Pascoe 24 has to go with you.
- MS. CRONK: Thank you, Madam Chair, Mr.

1	Martel.
2	MADAM CHAIR: The Board will begin at
3	nine o'clock tomorrow morning.
4	
5	Whereupon the hearing was adjourned at 3:55 p.m. to be reconvened Wednesday, November 14, 1990
6	commencing at 9:00 a.m.
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